

# **VOLUME 4 – PROJECT SPECIFIC INFORMATION (INFORMAL BID)**



## **1729 – Fleet Heavy Equipment Roof Replacement Project**

3255 N Texas St., Fairfield, CA 94533

**BID SET**  
(03/18/2022)

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ASBESTOS AND LEAD SURVEY REPORT 11-15-2017

ASBESTOS AND LEAD SURVEY REPORT 12-05-5021

#### **PREPARED BY:**

GENERAL SERVICES DEPARTMENT  
Capital Projects Management Division  
675 Texas Street, Suite 2500, Fairfield, California



## SECTION 01 11 00 - SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

- A. Work required to be performed by the Contractor:

Fleet Heavy Equipment Roof Replacement Project at  
3255 N Texas St., Fairfield, CA 94533

In conformity with the Drawings and Specifications, the Agreement Between Owner and Contractor, including the General and Supplementary Conditions and other Division 1 Specification Sections, hereinafter identified as applied to this Project; including furnishing all material, labor, tools, equipment and services necessary therefore and incidental thereto, complete and available for intended use.

#### 1.02 PROJECT DESCRIPTION and ADDITIONAL REQUIREMENT

- A. Project Description:

1. The Project includes remove existing and replace with new built-up roof, metal edging, curb, sleepers, lead jacks, and equipment flashing. Existing black and gray mastic along the perimeter roofing and penetrations contains asbestos containing material (ACM). Dispose ACM properly and use registered hazardous waste transporter to a permitted disposal facility. Provide. INCLUDE 500 SF (SQUARE FEET) ALLOWANCE FOR DRY WOOD ROT SHEETHING SUBSTRAIGHT. If we exceed the 500 SF of wood sheathing; Solano County will use the unit pricing for the dry rot sheathing.
2. Additive Alternative 1 – vertical caulking;
3. Additive Alternative 2 – access ladder;
4. Additive Alternative 3 – composition shingles;
5. Additive Alternative 4 – rain gutter. Yellow paint on the gutter has lead base paint. Dispose of existing rain gutter with paint properly and collect paint in plastic bag and dispose to permitted disposal.

- B. Unit Pricing

1. Provide unit pricing for dry rot sheathing for 100 SF (square feet). This will be used for potential Additions to the work required. The sheathing will be to match existing skip sheathing.

#### 1.03 LOCATION OF SITE

- A. The site of the work is on County property located at 3255 N Texas St., Fairfield, CA 94533.

#### 1.04 DRAWINGS AND SPECIFICATIONS

- A. The Specifications are those documents bound in the Project Manual and enumerated in the Table of Contents (Volumes 1-4), including General Conditions of the Contract for Construction, and Supplementary Conditions.
- B. For clarification: the documents released for bid are comprised of the drawings and specifications identified as "Issued for Bid" dated 03/18/2022.



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#### 1.05 PROJETED CONSTRUCTION SCHEDULE

- A. Construction is scheduled for substantial completion within 165 calendar days from the Notice of Proceed, as stated in Section 00 41 00 – Bid Form and Section 00 52 00 – Agreement Construction Schedule (estimated dates): between Owner and Contractor.
- B. Estimated Critical Milestones of Construction Schedule:
  - .1 05-24-2022 Contract Execution Date Board Date
  - .2 05-26-2022 Issue Notice to Proceed
  - .3 05-30-2022 Construction (Mobilization) Start Date
  - .4 06-27-2022 Complete Submittal Review
  - .5 10-17-2022 Substantial Completion
  - .6 11-04-2022 Final Completion
  - .7 12-06-2022 Notice of Completion Filed Board Date
  - .8 12-05-2027 Guarantee/Warranty and Warranty Bond Expiration Date

#### 1.06 INTERRUPTION OF SERVICES

- A. Contractor shall make provisions to accomplish the work of this Contract without undue interference with the County operations. Interruptions to services for the purpose of making or breaking connection shall be made only after consultation with the County a minimum of ten (10) working days in advance of connection break and shall be at such time and of such duration as may be directed. Contractor shall coordinate utility shutdowns for after-hours work.
- B. Work in other occupied spaces shall have minimal duration and to occur after hours to not interfere with operations.
- C. In addition, existing sewer, water, electrical, mechanical, and telephone/data lines disconnected for Work of this Contract shall not remain disconnected for more than 4 hours. If these utilities cannot be restored within the 4-hour period. Contractor shall provide temporary utility service to restore required utility at Contractor's expense. Electrical and fire sprinkler disruption needs to occur on non-public hours.

#### 1.08 SEQUENCE OF CONSTRUCTION OPERATIONS

- A. The Work will be conducted according to the Contractor's Construction Schedule accepted by the County.
- B. Before starting construction operations, Contractor shall confer with the County to review sequence of construction.
- C. The County desires to have the sequence of Work on-site in a manner to allow normal County operations to continue and function for its intended purpose. The existing operations cannot be interrupted to cause impact on the day-to-day operations of the County. The County does not want to dictate the 'means and methods' of the Contractor however there are operational issues that will need to be addressed.
- D. Contractor shall prepare schedules and include the sequencing of the Work as described on the Drawings and Specifications.
- E. Contractor shall coordinate erection of walls, steel framing, wall framing, wall panels, windows, partitions or other space enclosure with requirements of others for moving large pieces of equipment into building or outside the building or into room to be enclosed. Contractor shall consult with the Project Manager as to the



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necessity for deferring erection of such enclosures and shall deliver to the County a schedule of such deferments and reasons therefore. Cost of deferring construction shall be borne by Contractor.

#### 1.09 HOURS OF WORK

- A. The Contractor shall perform Work of this Contract on normal workdays and within the work hours of 7:00 a.m. to 5:00 p.m. The Contractor will be required to do any utility shutdowns.
- B. Work after hours and on Saturdays, Sundays and holidays is permitted as long as approval is received from the County at least 10 working days in advance.

#### 1.10 SITE CONDITIONS AND REQUIREMENTS

- A. Contractor shall keep drainage facilities, walks, and paved areas clean and free of mud and dirt, obstacles, etc. so that normal drainage and pedestrian and vehicular travel may be maintained.
- B. Contractor shall install temporary fencing around their laydown area(s). Contractor shall be responsible for restoring each area used back to the original condition.
- C. Do not use landscaped area(s) for work operations or storage unless area has been approved for use by the Project Manager. Contractor shall return area to original condition when work is completed.
- D. Contractor shall take pre-condition photos for the project conditions prior to start of the project of any existing damage to the building and submit to Solano County as part of the requirements of the contractors first pay application.

#### 1.11 WORK UNDER OTHER CONTRACTS

- A. Coordination with other contractors will be handled through the Project Manager. The Contractor will participate in all coordination meetings between contractors and will work cooperatively to accommodate the needs of other contractors without increasing the costs to the County. The Project Manager will set up said meetings and the number of meetings will be at the discretion of the Project Manager.

#### 1.12 CONTRACTOR USE OF PREMISES

- A. General: During the construction period the Contractor shall have full use of the designated Project area for construction operations, including use of the site. The Contractor's use of the premises is limited only by the County's right to perform construction operations with its own forces or to employ separate contractors on portions of the Project.
  - 1. Confine operations to areas in within Contract limits indicated including staging area and parking zone. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
  - 2. Keep driveways and entrances serving the premises clear and available to the County at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
  - 3. Repair and replace damaged existing construction to remain such as curbs, parking lot paving, roadways, site vegetation and utilities.





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4. The Contractor's laydown/staging area are located within the Heavy Fleet premises. Contractors can park personal vehicles in designated contractor parking areas. See attached SITE UTILIZATION PLAN.

#### 1.13 MISCELLANEOUS PROVISIONS

##### A. Project Completion Requirements:

1. Before final acceptance, inspect, test and adjust performance of every system or facility of the Work to ensure that overall performance is in compliance with the contract documents.
2. No later than 4 years and 11 months after the Notice of Completion, and after County use of the Project, return and again inspect, test and adjust the work. Measure performance relative to terms of the acceptance test performed at the end of the job and demonstrate and record compliance. See Section 00 72 00 – General Conditions of the Contract for Construction, for details and more information.
3. Submit a report of results to the County and Project Manager.
4. Instruct the County's operating personnel on operational requirements needed to maintain compliance.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 11 00

Fleet Heavy Equipment Roof Replacement  
3255 N. Texas St. Fairfield, CA 94533

**DOCUMENTATION 1**  
**SCOPE**  
**BID SET (03/18/2022)**



## SCOPE:

Provide base bid pricing for the following:

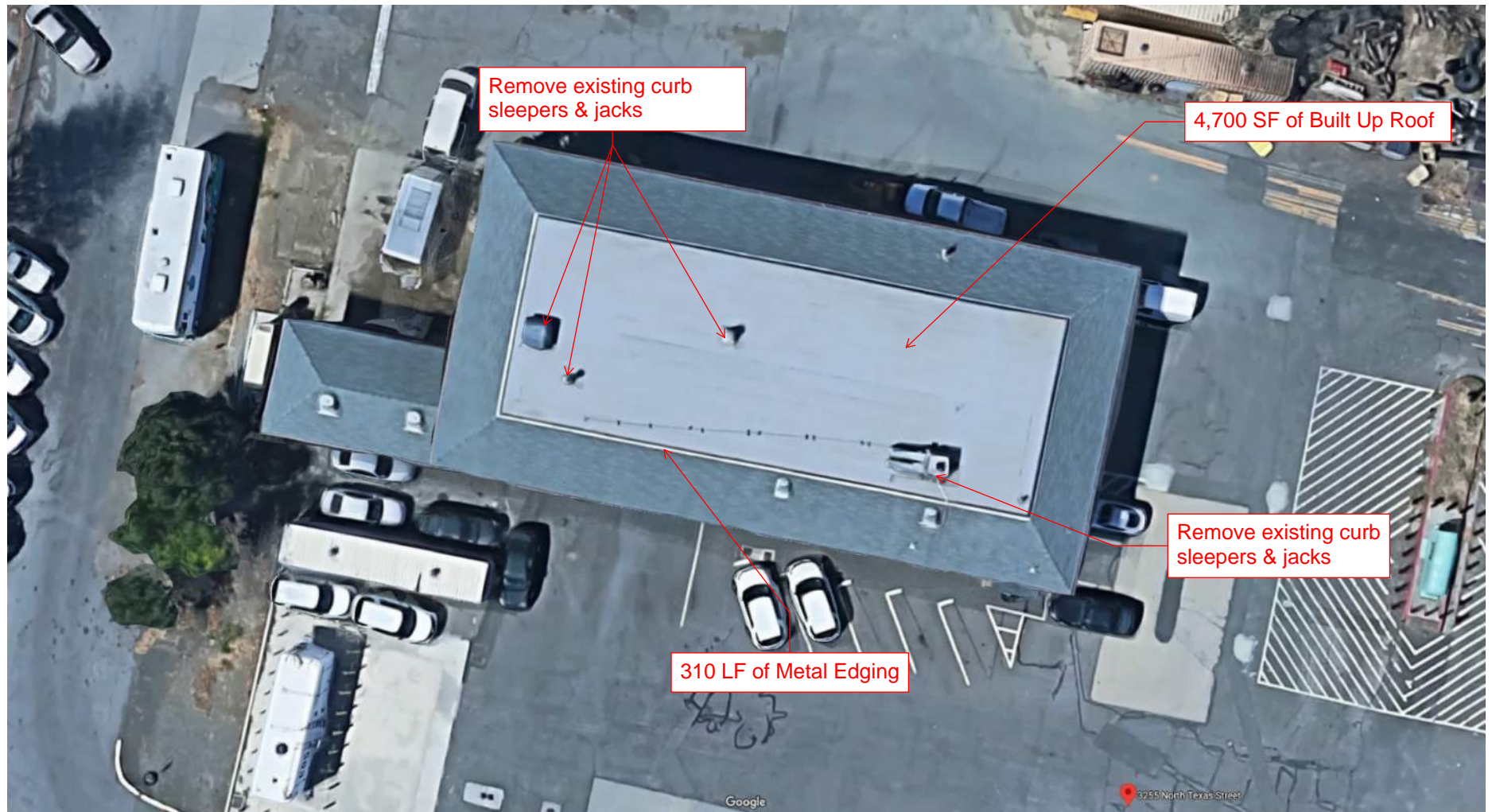
- Remove existing built up roofing and replace with new (4,700 SF)
- Remove existing metal edging and replace with new (310 LF)
- Remove existing curb sleepers/lead jacks/equipment flashing and replace with new
- Existing black/gray mastic built up roofing perimeter and penetrations contains asbestos containing material (ACM). Dispose ACM properly and use a registered hazardous waste transporter to a permitted disposal facility. See attached Terracon Report dated 12-08-2021.
- DAILY CLEANING.
- Five Year labor, material and equipment warranty on all materials installed.

Add Alternate:

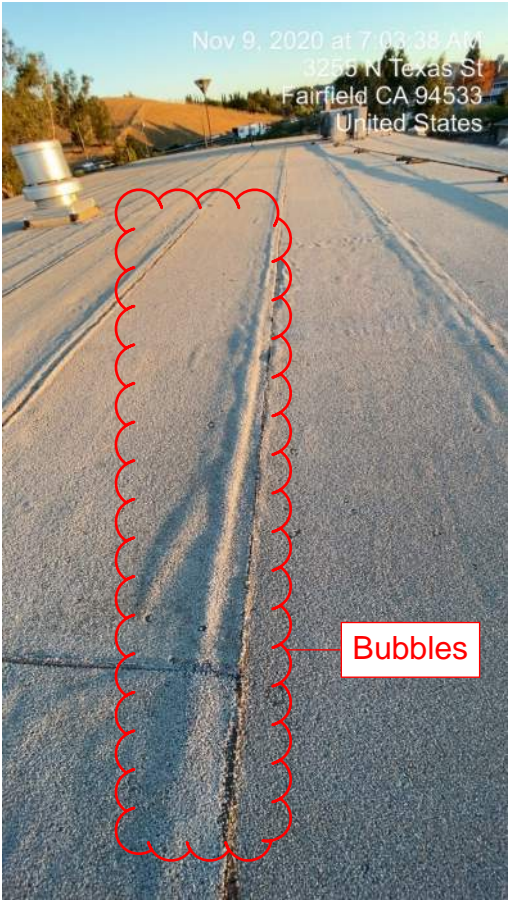
- Alternate 1: Caulk vertical expansion joints (250 LF)
- Alternate 2: Provide Access Ladder to the Roof
- Alternate 3: Remove existing comp shingles and replace with new (6,274 SF)
- Alternate 4: Remove existing rain gutter and replace with new (520 LF). Yellow paint on the gutter has lead base paint. Dispose of existing rain gutter properly and collect in a plastic back and dispose to a permitted disposal facility. See attached Terracon Report dated 11-15-2017.



## Base Bid

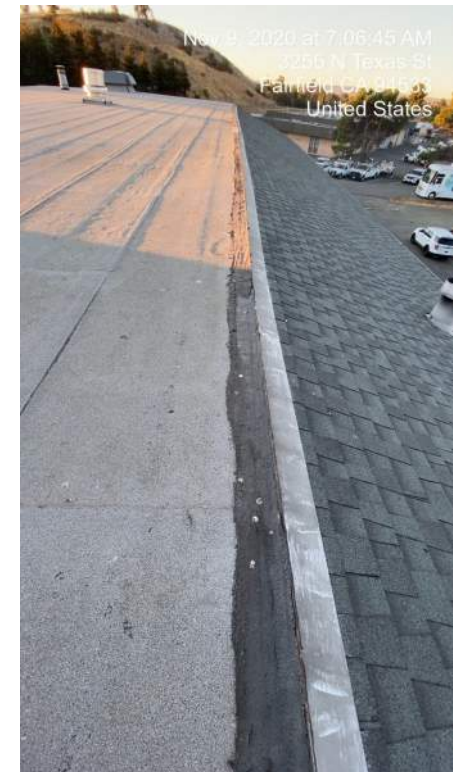


Built Up Roof Conditions





## Metal Edging Condition





Curb and Lead Jack Conditions



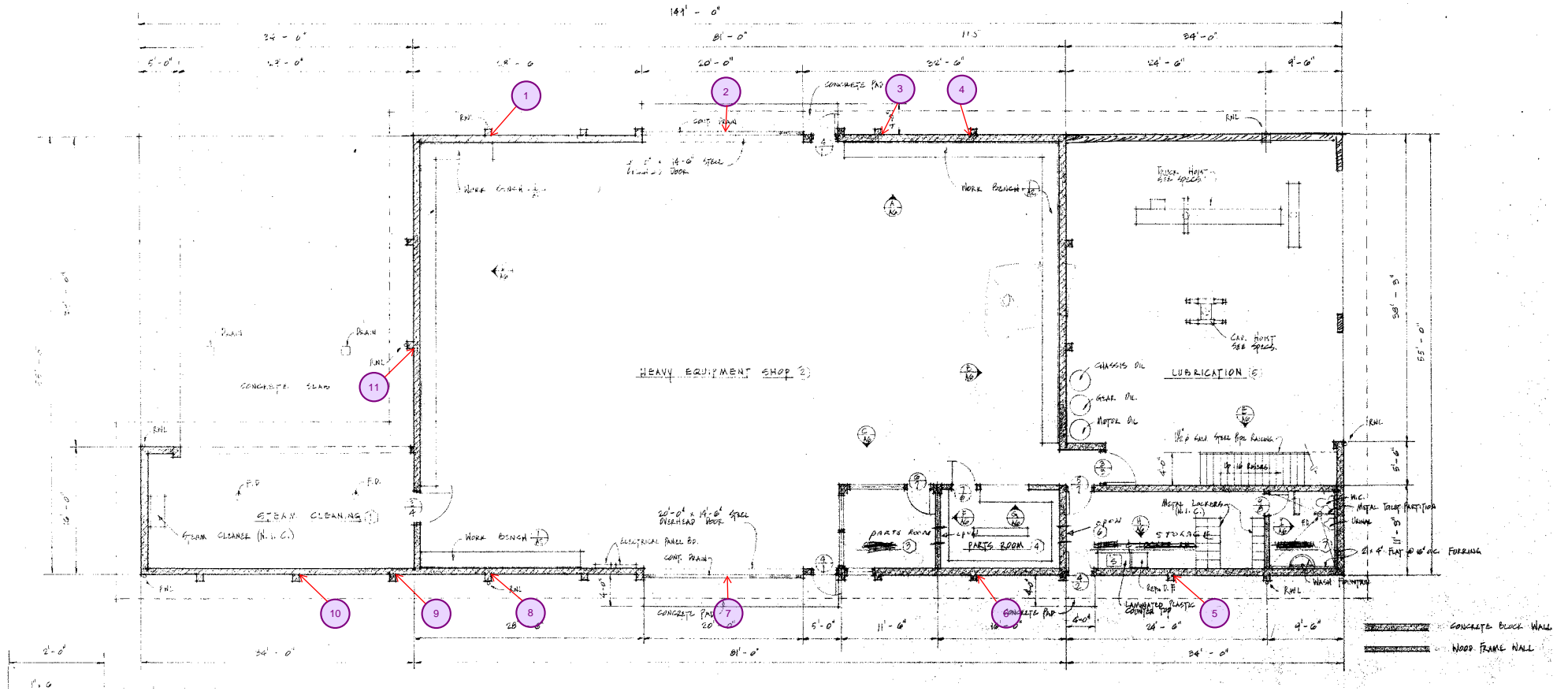


## Mechanical Contractor to Lift the unit install new curb and new flex duct

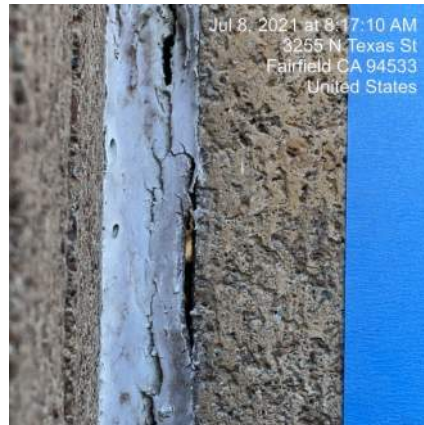
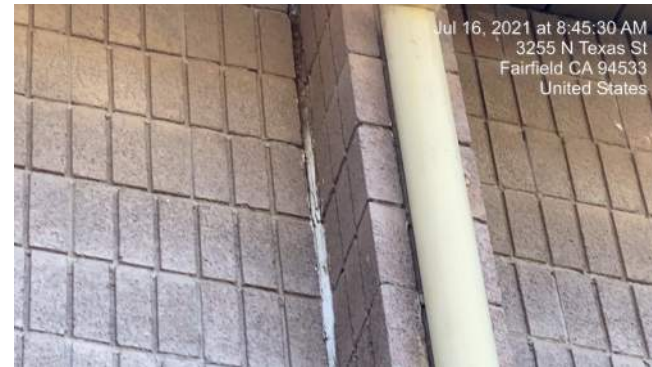


ADD ALTERNATE 1 Caulk Vertical Expansion Joints:

## Caulk vertical joints 11 locations



## Vertical Joint Conditions

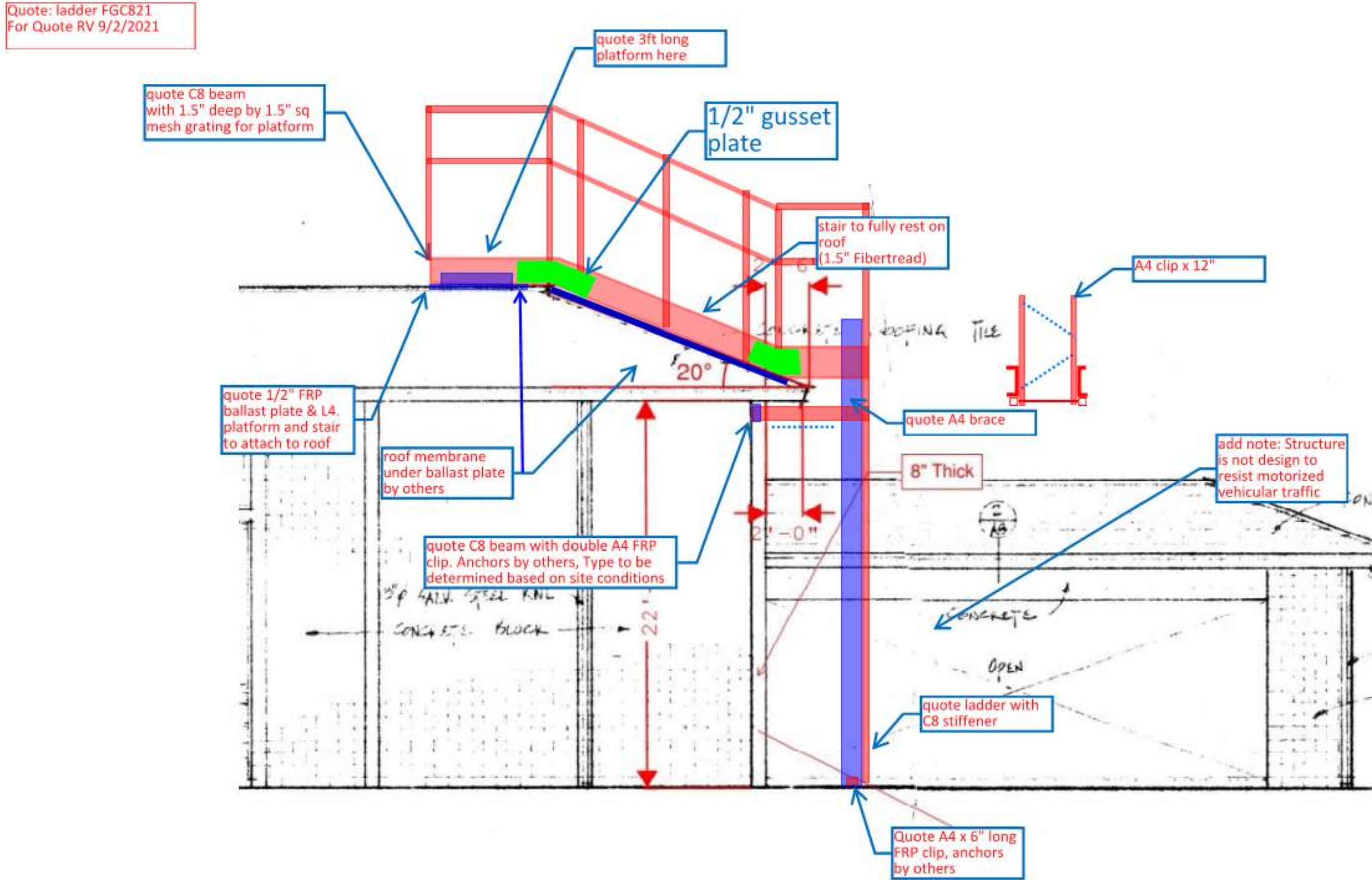




ADD ALTERNATE 2 Provide Access Ladder to Roof

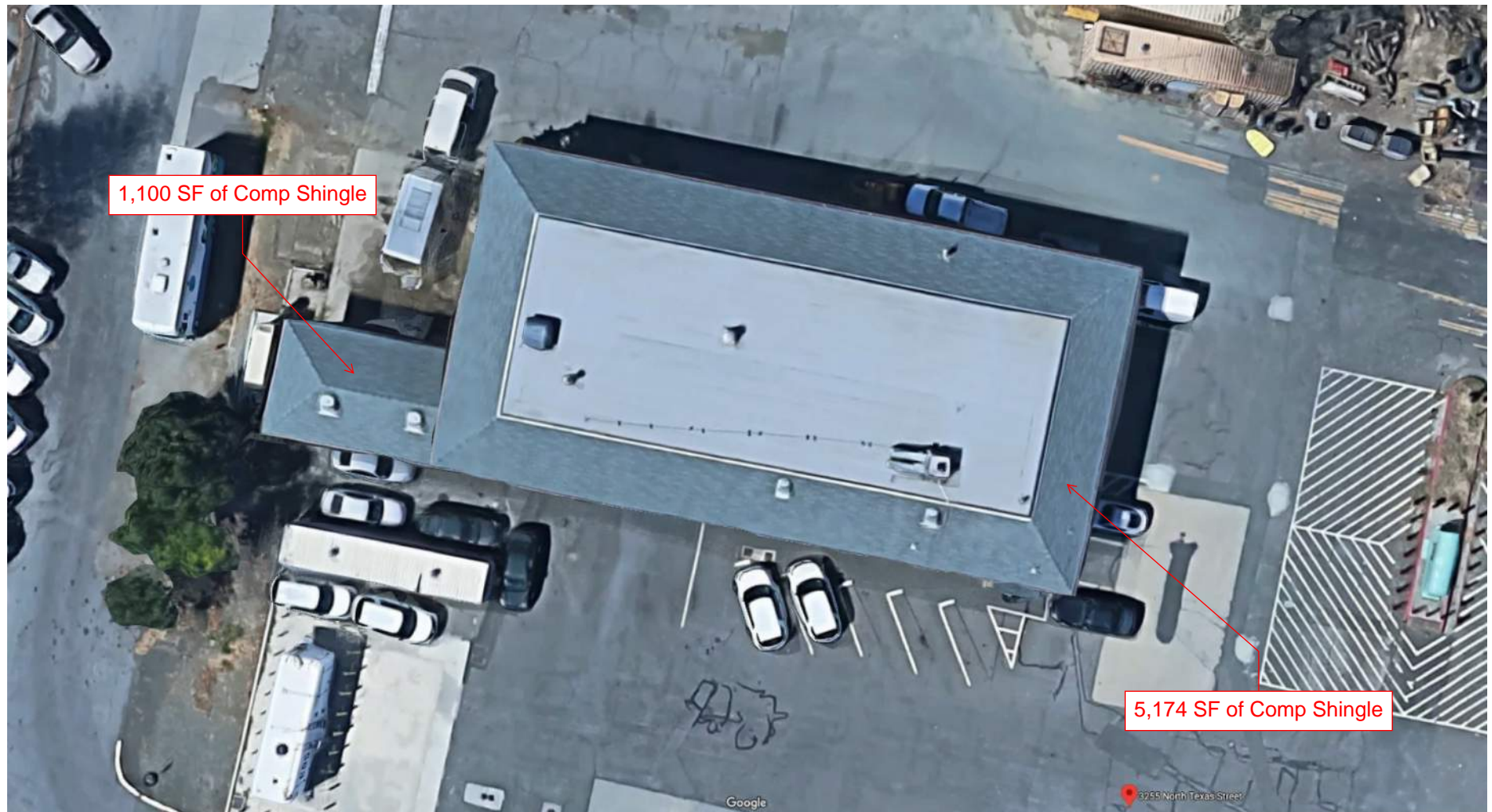


ADD ALTERNATE 2 Provide Access Ladder to Roof





ADD ALTERNATE 3 Remove Existing Comp Shingle and Replace with New  
**COMPOSITION SHINGLE MEASUREMENTS**



Composition Shingle Conditions





ADD ALTERNATE 4 Remove Existing Rain Gutter and Replace with New  
**RAIN GUTTER Measurements**



Yellow Paint on Rain Gutter has Lead Base Paint

## Rain Gutter Condition





## Rain Gutter Condition



**DOCUMENTATION 2**  
**SPECIFICATIONS**

**BID SET (03/18/2022)**

**FLEET HEAVY EQUIPMENT ROOF  
REPLACEMENT PROJECT**

**SPECIFICATIONS:**

01 73 20 - Selective Demolition

07 31 13 - Asphalt Shingle Roofing System

07 52 16 - SBS Modified Bituminous Membrane

07 62 00 - Sheet Metal Flashing

07 92 00 - Joint Sealant

## SECTION 017320 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2 SUMMARY

- A. **This Section includes the following for the said roof systems on: FLEET HEAVY EQUIPMENT**
  - 1. **Remove [e] roofing, insulation, flashings and edge metal to substrate.**
  - 2. **Remove any/all dead unused equipment as directed by owner.**
  - 3. **Cut out and remove defective decking as required and repair.**
  - 4. **Disconnect and lift [e] mechanical unit/ducting as directed.**
  - 5. **[E] gutters and downspouts to remain.**

#### 1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

#### 1.4 SUBMITTALS

Regulatory requirements Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- A. Standards: Comply with ANSI A10.6 and NFPA 241.

- B. Predemolition Conference: Conduct conference at Project site to comply with requirements.

#### 1.5 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Notify Owner of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: Hazardous materials are present in construction to be selectively demolished.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.

#### 1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 EXAMINATION

- A. Verify that utilities affected by the Work have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Owner.
- E. **Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.**

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
  - 1. Comply with requirements for existing services/systems interruptions specified in Summary.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
  - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
  - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

### 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with walks, walkways, and other adjacent occupied and used facilities.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - 2. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 3. Dispose of demolished items and materials promptly
- B. Removed and Reinstalled Items:
  - 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
  - 2. Protect items from damage during transport and storage.
  - 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.



### **3.5 DEMOLITION/INSTALLATION PROCEDURES**

- A. Remove [e] roofing, insulation and flashings**
- B. Remove [e] unused equipment.**
- C. Remove [e] defective roofing as marked.**
- D. Repair deck and related wood members as needed.**
- E. Install: New Polyiso insulation and secure with screws and plates. Provide a positive slope to perimeter of roof. Set ½ inch primed Den deck in LRF adhesive.**
- F. Install: New two [2] ply modified bitumen system, adhered with Cold adhesive applied at the rate of two [2] gallons per 100 square feet per inter-ply application.**
- G. Tie [n] roofing into [e] shingle roofing over a prepared surface. Install a [n] minimum eighteen [18] inch wide self adhering membrane, centered over transition from flat roof to sloped section. Seal all edges.**

### **3.6 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General:** Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning:** Do not burn demolished materials.
- C. Disposal:** Transport demolished materials off Owner's property and legally dispose of them.

### **3.7 CLEANING**

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.**

END OF SECTION 01732

## SECTION 07 31 13 - ASPHALT SHINGLE ROOFING SYSTEMS

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Granule surfaced asphalt shingle roofing.
- B. Moisture shedding underlayment, eaves, valley and ridge protection
- C. Associated metal flashing

#### 1.2 RELATED SECTIONS

- A. Section 06 10 00 – Rough Carpentry: Plywood Roof Sheathing
- B. Section 07 60 00 – Flashing and Sheet Metal

#### 1.3 REFERENCES

- A. ASTM A 653/A 653M – Standard Specification for Steel Sheets, Zinc-Coated (Galvanized) or Zinc-Iron-Alloy-Coated (Galvannealed) by the Hot-Dip Process
- B. ASTM D 225 – Standard Specification for Asphalt Shingles (Organic Felt) Surfaced with Mineral Granules.
- C. ASTM D 1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials used as Steep Roofing Underlayment for Ice Dam Protection.
- D. ASTM D 3018 – Standard Specification for Class A Shingles Surfaced with Mineral Granules.
- E. ASTM D 3161 – Standard Test Method for Wind Resistance of Asphalt Shingles (Fan-Induced Method).
- F. ASTM D 3462 – Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.
- G. ASTM D 4586 – Standard Specification for Asphalt Roof Cement, Asbestos-Free.

#### 1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's printed product information indicating material characteristics, performance criteria and product limitations.

- B. Manufacturer's Installation Instructions: Provide published instructions that indicate preparation required and installation procedures.
- C. Certificate of Compliance: Provide Certificate of Compliance from an independent laboratory indicating that the asphalt fiberglass shingles made in normal production meet or exceed the requirements of the following:
  - 1. ASTM E 108/UL 790 Class A Fire Resistance
  - 2. ASTM D 3161/UL 997 Wind Resistance.
  - 3. ASTM D 3462
- D. Shop Drawings: Indicate specially configured metal flashing, jointing methods and locations, fastening methods and locations and installation details as required by project conditions indicated.

#### 1.5 QUALITY ASSURANCE

- A. Installer Minimum Qualifications: Installer shall be licensed or otherwise authorized by all federal, state and local authorities to install all products specified in this section. Installer shall perform work in accordance with NRCA Roofing and Waterproofing Manual
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by architect
  - 2. Do not proceed with remaining work until workmanship, color and pattern are approved by Architect.
  - 3. Rework Mock-Up area as required to produce acceptable work.
- C. Pre-Installation Meeting – Conduct a pre-installation meeting at the site prior to commencing work of this section: Require attendance of entities directly concerned with roof installation. Agenda will include:
  - 1. Installation procedures and manufacturer's recommendations
  - 2. Safety procedures
  - 3. Coordination with installation of other work
  - 4. Availability of roofing materials.
  - 5. Preparation and approval of substrate and penetrations through roof.
  - 6. Other items related to successful execution of work
- D. Maintain one copy of manufacturers application instructions on the project site.
- E. Verify that manufacturer's label contains references to specified ASTM standards

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store Products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials and materials used with solvent based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Deliver shingles to site in manufacturer's unopened labeled bundles. Promptly verify quantities and conditions. Immediately remove damaged products from site.

1.7 PROJECT CONDITIONS

- A. Anticipate and observe environmental conditions (temperature, humidity and moisture) within limits recommended by manufacturer for optimum results. Do not install products under environment conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Manufacturer's Warranty: Furnish shingle manufacturer's warranty for the product listed below:
  - 1. CertainTeed Landmark Pro Lifetime Limited Warranty
- B. Warranty Supplement: Provide manufacturer's supplemental warranty (CertainTeed's Surestart or Surestart Plus) to cover labor and materials in the event of a material defect for the following period after completion of application of shingles:
  - 1. First Ten Years (All Lifetime Warranty products)
- C. Extended Warranty Protection (can only be provided by a CertainTeed Credentialed Contractor): Provide NON-PRO-RATED SureStart Plus protections as follows:
  - 1. 3 Star Coverage (20 years) material and labor costs for repair or replacement
- D. Warranty Transferability Clause: Make available to Owner shingle manufacturer's standard option for transferring warranty to a new owner.

PART 2 PRODUCTS

2.1 MANUFACTURERS

Acceptable Manufacturer: Provide products manufactured by the CertainTeed Corporation. Contact Sales Support Group P.O. Box 860 Valley Forge, PA 19482 Toll Free 800-233-8990

- A. Substitutions: Not permitted

2.2 ASPHALT FIBERGLASS SHINGLES

A. CertainTeed Landmark Pro : Conforming to ASTM D 3018 Type I – Self-Sealing; UL Certification of ASTM D 3462, ASTM D 3161/UL997 80-mph Wind Resistance and UL Class A Fire Resistance; glass fiber mat base; ceramically colored algae resistant granules across entire face of the shingle; two-piece laminated shingle.

B. Weight: (250 pounds East Coast) (270 pounds West Coast) pounds per square (100 square feet) (14.6 kg/sq m)

C. Color: As selected by Owner from manufacturer's standards

## 2.3 SHEET MATERIALS

A. Underlayment: ASTM 2535 Tensile -4378 N/m [25/bs/in] Elongation: 250%  
1. Field, Eaves & Rakes: Self adhered –vapor controlled membrane

## 2.4 FLASHING MATERIALS

A. Sheet Flashing: ASTM A 361/A361M; 22 Gauge (0.45 mm) steel with minimum G115/Z350 galvanized coating

## 2.5 ACCESSORIES

A. Nails: Standard round wire type roofing nails, corrosion resistant; hot dipped zinc coated steel, aluminum or chormated steel; minimum 3.8 inch (9.5mm) head diameter; minimum 11 or 12 gage (2.5mm) shank diameter; shank to be sufficient length to penetrate through the roof sheathing or ¾ inch (19mm) into solid wood, plywood or non-veneer wood decking.

B. Asphalt Roofing Cement: ASTM D 4586, Type I or II

## 2.6 FLASHING FABRICATION

A. Form flashing to profiles indicated on Drawings and to protect roofing materials from physical damage and shed water.

B. Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.

# PART 3 EXECUTION

## 3.1 EXAMINATION

A. Verify existing site conditions under provisions of Section 01 70 00.

B. Verify that roof penetrations and plumbing stacks are in place and flashed to deck surfaces.

- C. Verify deck surfaces are dry and free of ridges, warps or voids.

### 3.2 ROOF DECK PREPARATION

- A. Follow shingle manufacturer's recommendations for acceptable roof deck material
- B. Broom clean deck surfaces under eave protection and underlayment prior to their application

### 3.3 INSTALLATION – PROTECTIVE UNDERLAYMENT

- A. Install one layer of underlayment perpendicular to slope of roof and lap minimum 4 inches over eave protection.
- B. Weather-lap and seal watertight with asphalt roofing cement items projecting through or mounted on roof.

### 3.4 INSTALLATION – METAL FLASHING

- A. Weather-lap joints minimum 2 inches (50 mm).
- B. Seal work projecting through or mounted on roof with asphalt roofing cement and make weather tight.

### 3.5 INSTALLATION- ASPHALT SHINGLES

- A. Install shingles in accordance with manufacturer's instructions for product type and application specified.

### 3.6 FIELD QUALITY CONTROL

- A. Field inspection will be performed under provisions of Section 01 40 00.
- B. Visual inspection of the work will be provided by Owner. If conditions are unacceptable, Owner will notify the Architect.

### 3.7 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01 70 00.
- B. Do not permit traffic over finished roof surface.

END OF SECTION

SECTION 07 52 16.11 - SBS MODIFIED BITUMINOUS MEMBRANE ROOFING, FLUID APPLIED

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Styrene-butadiene-styrene (SBS) modified bituminous Cool Roof white granulated membrane roofing system on wood deck, including but not limited to:
  - a. Roof insulation. Furnish and install [n] slope to drain insulation. Mechanically fasten to wood deck with screws and plates. Set additional layers in LRF adhesive.
  - b. Roof cover board: Adhere 1/4 inch primed Dens Deck insulation with LRF adhesive.
  - c. Roof membrane system consisting of base sheet, modified bitumen cap and membrane base flashings.
  - d. Installation of modified BUR system with White granulated Cool Roof surfacing sheet.
  - e. Furnish and install new flashings @ penetrations/pipes, curbs and HVAC/ducting.
  - f. Tie in from [n] roofing to shingles transition.

B. Related Sections:

1. Division 01732 Demolition Section
2. Division 06105 Carpentry section for wood deck repair, curbs, and blocking.
3. Division 07620 Section "Sheet Metal Flashing and Trim" for custom metal roof penetration flashings, flashings, and counterflashings.

1.3 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and waterproofing Manual" for definition of terms related to roofing work in this Section.



- B. COLD ADHESIVE: Is a one [1] part, cold process asphalt adhesive meeting ASTM D 6511. Powerply cold adhesive is asbestos free, cold process membrane interply adhesive. Approved to be used in MB systems.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work. Provide roof plan showing orientation and types of roof deck, orientation of membrane roofing, and fastening spacing's and patterns for mechanically fastened components.
  - 1. Base flashings and built-up terminations.
    - a. Indicate details meet requirements of NRCA and FMG required by this Section.
  - 2. Crickets, saddles, and tapered insulation, including slopes.
  - 3. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products:
  - 1. Sheet roofing materials, of color specified for exposed material.
  - 2. Dens Deck board primed.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Product Certificate: Submit notarized certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.
- B. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.
  - 1. Include letter from Manufacturer written for this Project indicating approval of Installer.
- C. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
  - 1. Submit evidence of compliance with performance requirements, including UL listing certificate.
  - 2. Indicate that proposed system components are compatible.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of built-up roofing.
- E. Warranties: Unexecuted sample copies of special warranties.

- F. Field Quality Control Reports: Daily reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions taken to correct defective work.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: To include in maintenance manuals.
- B. Warranties: Executed copies of warranties.

#### 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of ten [10] years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified. Contractor must have an established office/shop located within a fifty [50] miles radius of project to properly service project and leak response.
- B. Manufacturer Qualifications: Approved manufacturer with UL listed roofing systems comparable to those specified for this Project, with minimum ten [10] years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
  - 1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
    - a. Product data, including certified independent test data indicating compliance with requirements.
    - b. Samples of each component.
    - c. Sample submittal from similar project.
    - d. Project references: Minimum of five installations of specified products not less than five years old, with Owner and Architect contact information.
    - e. Sample warranty, unexecuted with follow up inspections and dates indicated on warranty form.
    - f. Sample copy of weekly report
  - 2. **Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements. Only prime contractor will be allowed to submit request for substitution. Submittals by manufactures and marketing companies will not be allowed.**
  - 3. **Request for substitution: Submit separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution**

**with the requirements of contract documents. Schedule for submittal for Architect review and comment: Ten [10] days prior to date of bid. Give itemized comparison of proposed substitution with specified product, product by product, listing variations and reference to specifications. 3<sup>rd</sup> party independent test results are required with each product. Highlight all specified standards and limitations in both the specified product submittal and the substituted product request to make comparison direct and obvious. Submittals that are not complete, not highlighted and not clear shall be rejected upon receipt.**

4. **Provide same warranty for substitution as for specified system.**
  5. Approved manufacturers must meet separate requirements of Submittals Article.
- C. Roofing Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be one of the following:
1. An authorized full-time technical employee of the manufacturer.
  2. An independent party certified as a Registered Roof Observer by the Roof Consultants Institute, retained by the Contractor or the Manufacturer and approved by the Manufacturer.
- D. Preinstallation Roofing Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
  2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
  3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  4. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
  5. Review structural loading limitations of roof deck during and after roofing.
  6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
  7. Review governing regulations and requirements for insurance and certificates if applicable.

8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
  1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

#### 1.9 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
  1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
  2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
  3. Remove temporary plugs from roof drains at end of each day.
  4. Remove and discard temporary seals before beginning work on adjoining roofing.

#### 1.10 WARRANTY

- A. Warranty, General: Warranties specified shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on

product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

- B. Manufacturer's Warranty: Manufacturer's standard or customized form, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
  - 1. Manufacturer's warranty includes roofing membrane, base flashings, fasteners, roofing membrane accessories and other components of roofing system specified in this Section.
  - 2. Warranty Period: 20 years from date of Substantial Completion.
- C. Installer's Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
  - 1. Warranty Period: Five [5] years from date of Substantial Completion.
- D. Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's annual inspections and preventive maintenance is included in the Contract Sum.
  - 1. Inspections to occur in the following years subsequent to completion: 2, 5, 10 and 15 completing: Follow up inspections with reports to owner, preventative maintenance and housekeeping.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Inc., [www.tremcoroofing.com](http://www.tremcoroofing.com), named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product by one of the following:
  - 1. Owner Approved Equal based upon meeting:

Product/System requirements, warranty coverage/ language, project monitoring and listed in most current edition of the CRRC listings.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

## 2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Roofing shall withstand exposure to weather without failure or leaks due to defective manufacture or installation.
  - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
  - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Flashings and Fastening: Comply with requirements of Division 07 Sections "Sheet Metal Flashing and Trim" and "Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials and installation techniques that comply with requirements and recommendations of the following:
  - 1. NRCA Roofing Manual (Sixth Edition) for construction details and recommendations.
  - 2. SMACNA Architectural Sheet Metal Manual (Seventh Edition) for construction details.
- D. Exterior Fire-Test Exposure: ASTM E 108, UL Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- E. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- F. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- G. Energy Performance: Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.
- H. FM requirements: Comply with FM requirements for wind uplift based on I-90 fastening pattern.

## 2.3 ROOFING MEMBRANE MATERIALS

- A. Sheathing Paper: Red rosin type, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).
  - 1. Base Sheet: ASTM D 6162 Type III Grade S heavy-duty base sheet.
    - a. Basis of design product: Tremco, Endure 300 Base or equal.
    - b. Tear strength, ASTM D 5147 590 lbf/in MD and 590 lbf/in XMD

- c. Tensile Strength, ASTM 5147 355 lbf/in MD and 310 lbf/in XMD
- d. Thickness: 2.5 mm

B. SBS Modified Bituminous Cap Sheet:

- 1. **Roof finishing sheet:** ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.
  - a. Basis of design product: Tremco, POWERply Standard FR GT24W, or equal
  - b. Exterior Fire-Test Exposure, ASTM E 108: Class A.
  - c. Tensile Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction 70 lbf/in (12.0 kN/m); Cross machine direction 50 lbf/in (8.8 kN/m).
  - d. Tear Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction, 90 lbf (400 N); Cross machine direction 90 lbf (400 N).
  - e. Elongation at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.
  - f. Low Temperature Flex, maximum, ASTM D 5147: -10 deg. F (-23 deg. C).
  - g. Thickness, minimum, ASTM D 5147: 0.157 inch (4 mm).
  - h. Solar Reflectance Index (SRI), ASTM E 1980: 88.

C. Base Flashing Backer Sheet:

- 1. ASTM D 6163 Type III Grade S heavy-duty base sheet, or equal
  - a. Basis of design product: Tremco, Powerply Heavy Duty Base
  - b. Tear strength, ASTM D 5147 220 lbf/in/MD and 240 lbf/in XMD
  - c. Tensile Strength, ASTM 5147 220 lbf/in MD and 190 lbf/in XMD
  - d. Thickness: 3.0 mm

D. Base Flashing Sheet: for walls and curbs

- 1. ASTM D 6163 Type I Grade G SBS-modified asphalt-coated glass-fiber-reinforced sheet, granular surfaced with a factory applied white reflective granule; CRRC listed and California Title 24 Energy Code compliant.
  - a. Basis of design product: Tremco, POWERply Standard FR GT24W, or equal
  - b. Exterior Fire-Test Exposure, ASTM E 108: Class A.

- c. Tensile Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction 70 lbf/in (12.0 kN/m); Cross machine direction 50 lbf/in (8.8 kN/m).
  - d. Tear Strength at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction, 90 lbf (400 N); Cross machine direction 90 lbf (400 N).
  - e. Elongation at 73 deg. F (23 deg. C), minimum, ASTM D 5147: Machine direction 4 percent; Cross machine direction 4 percent.
  - f. Low Temperature Flex, maximum, ASTM D 5147: -10 deg. F (-23 deg. C).
  - g. Thickness, minimum, ASTM D 5147: 0.157 inch (4 mm).
  - h. Solar Reflectance Index (SRI), ASTM E 1980: 88.
- E. Glass-Fiber Fabric: Woven glass-fiber cloth treated with asphalt, ASTM D 1668 Type I.

## 2.4 FLUID APPLIED MATERIALS

- A. Powerply Cold Adhesive
- 1. Basis of design product: Tremco, Powerply Cold Adhesive, or equal
  - 2. VOC: ASTM D6511 -250 g/l
  - 3. Density: ASTM D1475 8.1lbs./gal
  - 4. Asphalt content: 45% ASTM D 6511
  - 5. Nonvolatile content: 75% ASTM D 6511
- B. Asphalt primer, water-based, polymer modified.
- 1. Basis of design product: Tremco, TREMprime WB.
  - 2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 2 g/L.
- C. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

## 2.5 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
- 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Cold-Applied Adhesive:



1. Roof Cement, Asphalt-Based: ASTM D 4586, Type II, Class I, fibrated roof cement formulated for use in installation and repair of asphalt ply and modified bitumen roofing plies and flashings; UL-classified for fire resistance.
    - a. Basis of design product: Tremco, ELS.
    - b. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 190 g/L.
    - c. Non-Volatile Matter, ASTM D 4586: 85 percent.
  - C. Joint Sealant: Elastomeric joint sealant compatible with roofing materials, with movement capability appropriate for application.
    1. Joint Sealant, Polyurethane: ASTM C 920, Type S, Grade NS, Class 25 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints..
      - a. Basis of design product: Tremco, TremSEAL D.
      - b. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 85 g/L.
      - c. Hardness, Shore A, ASTM C 661: 40.
      - d. Color: White.
  - D. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM Global 4470, designed for fastening roofing components to substrate, tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.
  - E. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."
  - F. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.
  - G. Fluid applied membrane: Fluid applied reinforced membrane for pipes, penetrations and projections: Two [2] part Bio based fluid applied membrane by roof systems manufacture.
- 2.6 ROOF INSULATION
- A. Roof Insulation, General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.
    1. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes at backside of curbs.
  - B. Roof Board Primed Dens Deck:

1. Dens Deck: ASTM C 1177 1/4 inch primed Dens Deck
- C. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- D. Cant Strips: ASTM C 208, Type II, Grade I, cellulosic –fiber.
- E. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- F. Substrate Joint Tape: Minimum 6 inch (150 mm) wide, coated, glass-fiber joint tape.
- G. Tapered insulation: ASTM C 209 Polyisocyanurate tapered system.

## 2.7 SURFACING MATERIALS

- A. Acrylic Roof Coating, Fire-Retardant Elastomeric: Intumescent and solar reflectant, Energy Star qualified, CRRC listed, and California Title 24 Energy Code compliant, formulated for use on bituminous roof surfaces.
  1. Basis of design product: Tremco, Polarcote FR, or equal
  2. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: Not more than 30 g/L.
  3. Reflectance, minimum, ASTM C 1549: 82 percent.
  4. 4. Solar Reflectance Index (SRI), ASTM E 1980: 103.

## 2.8 WALKWAYS

- A. Walkway pads, ceramic-granule-surfaced reinforced asphaltic composition slip-resisting pads, manufactured as a traffic pad for foot traffic, 1/2-inch (13 mm) thick minimum.
  1. Basis of design product: Tremco, Trem-Tred, or equal
  2. Flexural Strength at max. load, minimum, ASTM C 203: 210 psi (1.5 kPa).
  3. Granule adhesion (weight loss), maximum, ASTM D 4977: 1.1 gram.
  4. Impact Resistance at 77 deg. F (25 deg. C), ASTM D 3746: No Damage to Roof.
  5. Pad Size: 36 by 48 inch (914 by 1220 mm).

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
  1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.

2. Wood Roof Deck: Verify that wood deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.

- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

### 3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's recommendations.
- B. Install roofing system in accordance with the following NRCA Manual Plates and NRCA recommendations, as applicable; modify as required to comply with requirements of FM Global references above:
  1. Base Flashing for Wall-supported Deck: Plates MB-5 and MB-5S.
  2. Embedded Edge Metal Flashing Edge (Gravel-stop): Plates MB-3 and MB-3S.
  3. Gutter at Draining Edge: Plates MB-22 and MB-22S.
  4. Equipment Support Curb: Plates MB-9 and MB-9S.
  5. Raised Curb Detail at Rooftop HVAC Units (Job site constructed wood curb): Plates MB-13 and MB-13S and Division 06 Section "Miscellaneous Rough Carpentry."
  6. Penetration, Structural Member through Roof Deck: Plates MB-15 and MB-15S.
  7. Penetration, Sheet Metal Enclosure for Piping Through Roof Deck: Plates MB-16 and MB-16S
  8. Penetration, Isolated Stack Flashing: Plates MB-17 and MB-17S.
  9. Penetration, Plumbing Vent: Plates MB-18 and MB-18S.

### 3.4 INSULATION INSTALLATION

- A. Comply with built-up roofing manufacturer's written instructions for installing roof insulation. Furnish and install tapered insulation system per plan and manufactures requirements.
- B. Cant Strips: Install and secure preformed 45-degree cant strips at junctures of built-up roofing with vertical surfaces or angle changes greater than 45 degrees.

- C. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
  - 1. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- E. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- F. Mechanically Fastened Insulation: Install layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
  - 1. Fasten first layer of insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification. Requirements based upon FM I-90 wind uplift fastening pattern.
  - 2. Set cants and tapered edge and secondary layers in low rise foam application.

### 3.5 FLUID APPLIED ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing" and as follows:
  - 1. Deck Type: Wood deck.
  - 2. Base Sheet: One.
    - a. Adhering Method: Fluid applied.
  - 3. Granular-Surfaced SBS-Modified Asphalt Cap Sheet:
    - a. Adhering Method: Fluid applied.
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Cooperate with testing agencies engaged or required to perform services for installing roofing system.
- D. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
  - 1. Provide tie-offs at end of each day's work configured as recommended by NRCA Roofing Manual Appendix: Quality Control Guidelines - Insulation to protect new [and existing] roofing.

2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
  3. Remove temporary plugs from roof drains at end of each day.
  4. Remove and discard temporary seals before beginning work on adjoining roofing.
- E. Fluid applied mixing: Mix Part A [base] for 1 minute before adding Part B [curative]. After adding part B, mix the combined materials for a minimum of two [2] minutes. Make sure to mix areas around the side walls and bottom of pail.
1. Apply fluid applied adhesive at the rate of two [2] gallons per 100 square feet, interply.
- F. Substrate-Joint Penetrations: Prevent adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

### 3.6 BASE-SHEET INSTALLATION

- A. Loosely lay one course of rosin sheet, lapping edges and ends a minimum of 2 inches and 6 inches, respectively. Scatter nail in place with square head nails driven flush.
- B. Install lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:
1. Adhere to insulation in a solid application of fluid applied adhesive @ the rate of two [2] gallons per 100 square feet.
  2. Press base sheet into adhesive with weighted roller.

### 3.7 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing membrane [basesheet] cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:
1. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer. Back nail as required for slope.
  2. Adhere to base sheet in a continuous application of fluid applied adhesive at the rate of two [2] gallons per 100 square feet.
  3. Press membrane into adhesive using a weighted roll. Side laps 4 inches and end laps 6 inches. Heat weld all laps
- B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Install roofing membrane sheets so side and end laps shed water. Completely bond and seal laps, leaving no voids.
1. Repair tears and voids in laps and lapped seams not completely sealed.

2. Heat weld all laps.
3. Embed color matched granules to all exposed adhesive to cover.

### 3.8 FLASHING AND STRIPPING INSTALLATION

- A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:
  1. Prime substrates with asphalt primer if required by roofing system manufacturer.
  2. Backer Sheet Application: Install backer sheet and adhere to substrate in a continuous application of fluid applied adhesive.
  3. Flashing Sheet Application: Adhere flashing sheet to substrate in a continuous application of fluid applied adhesive at the rate of two [2] gallons per 100 square feet.
- B. Extend base flashing up walls or parapets a minimum of 12 inches (300 mm) above built-up roofing and 6 inches (150 mm) onto field of roof membrane.
- C. Flashing Sheet Top Termination: Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
  1. Seal top termination of base flashing with a metal termination bar and joint sealant.
- D. Flashing Sheet Bottom Termination: Adhere flashing sheet to roof membrane sheet continuously along bottom of flashing sheet.
- E. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.
- F. Pipes/penetrations/projections: Clean prime and coat all pipes/penetrations and projections with AG Bio base @ the rate of two [2] gallons per 100 square feet. While base is wet, embed Perma fab reinforcement around projection, allow to cure and top coat with AG top coat @ the rate of one [1] gallon per 100 square feet. Extend onto the field of the roof and square off neatly.
- G. Gravelstop/edge metal: Fabricate, furnish and install [n] gravelstop /edge metal along perimeter. On flat roof, set primed metal in to mastic and fasten flange three [3] inches O.C staggered and strip in. On shingle side, metal should be angled to accommodate slope down the slope, covering the top row shingles.
- H. Ducting: Set primed flange of [n] ducting base in adhesive and secure flange. Strip flange into [n] roof system. Set [e] ducting in over [n] base and secure. Strip perimeter of ducting.

### 3.9 SURFACING AND COATING INSTALLATION

- A. Apply Coating as required to touch up roof membrane, paint vent pipes, conduits and miscellaneous projections. Note: if the Cool roof cap marred or discolored, the cap will be replaced with new, like kind.

3.10 WALKWAY INSTALLATION

- A. Walkway Pads: Install walkway pads using units of size indicated or, if not indicated, of manufacturer's standard size according to walkway pad manufacturer's written instructions. Set two [2] walk pads at each unit.
  - 1. Set walkway pads in cold-applied adhesive.

3.11 FIELD QUALITY CONTROL

- A. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
- B. Roofing Inspector: Contractor shall engage a qualified roofing inspector for a minimum of 6 full-time days on site to perform roof tests and inspections and to prepare start up, interim, and final reports. Roofing Inspector's quality assurance inspections shall comply with criteria established in ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
- C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation at commencement and upon completion.
  - 1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
- D. Repair or remove and replace components of built-up roofing where test results or inspections indicate that they do not comply with specified requirements.
  - 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.12 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.14 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS \_\_\_\_\_ of \_\_\_\_\_, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
  - 1. Owner:

2. Address:
  3. Building Name/Type:
  4. Address:
  5. Area of Work:
  6. Acceptance Date:
  7. Warranty Period:
  8. Expiration Date:
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
    - a. lightning;
    - b. peak gust wind speed exceeding 74 mph (33 m/s);
    - c. fire;
    - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    - f. vapor condensation on bottom of roofing; and
    - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
  2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
  3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
  4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
  5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall



become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed by:

1. Authorized Signature:
2. Name:
3. Date:

F.

END OF SECTION 07 52 16.11

## SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following sheet metal flashing and trim:
  - 1. Furnish and install new gravelstop and edge metal.
  - 2. Furnish and install new metal @ base of units as required.
  - 3. Furnish miscellaneous flashings and terminations as needed.
- B. Related Sections include the following:
  - 1. Division Section 07516 MB membrane roofing

#### 1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
- C. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:

1. Identify material, thickness, weight, and finish for each item and location in Project.
  2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
  3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
  4. Details of expansion-joint covers, including showing direction of expansion and contraction.
- C. Samples for Initial Selection: For each type of sheet metal flashing and trim indicated with factory-applied color finishes.
1. Include similar Samples of trim and accessories involving color selection.
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches long. Include fasteners, **cleats, clips**, closures, and other attachments.
  2. Trim: 12 inches long. Include fasteners and other exposed accessories.
  3. Accessories: Full-size Sample.
  4. Gravelstop
  5. Gutters
  6. Downspouts

## 1.5 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
1. Copper Standard: Comply with CDA's "Copper in Architecture Handbook."
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
  2. Review methods and procedures related to sheet metal flashing and trim.
  3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
  4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

## 1.7 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
  - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
  - 2. Products: Subject to compliance with requirements, provide one of the products specified.

### 2.2 SHEET METALS

- A. Gutters and downspouts: Galvanized steel sheet: ASTM A 526 twenty-four gauge, PAINT READY.
- B. Edge metal :Kynar Coated Steel Sheet or GSM paint ready: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
  - 1. Galvanized Steel Sheet: ASTM A 526, twenty-four [24] gauge
  - 2. Exposed Finishes: Apply the following coating:
    - a. Kynar coated metal 500 or Hylar 5000 with pre-coated finish with 0.2 mil baked on primer and .08 mil baked on topcoat. For 1.0 dry mil thickness.
      - 1) Color: Selected by owner.
- C. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Self adhering membrane: sheet complying with ASTM D 6163 Type I grade by roof systems manufacturer. SA by roof systems manufacture.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
  - 1. Nails for Copper Sheet: Copper or hardware bronze, 0.109 inch (2.8 mm) minimum and not less than 7/8 inch (22 mm) long, barbed with large head.
  - 2. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
  - 3. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
  - 4. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
  - 5. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- C. Solder for Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
- D. Solder for Lead-Coated Copper: ASTM B 32, Grade Sn60, 60 percent tin and 40 percent lead.
- E. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
- F. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.
- G. Solder for Lead: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
- H. Solder for Zinc: ASTM B 32, 60 percent lead and 40 percent tin with low antimony, as recommended by manufacturer.
- I. Burning Rod for Lead: Same composition as lead sheet.
- J. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- K. Elastomeric Sealant: ASTM C 920, elastomeric **polyurethane** polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- L. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.



- M. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- N. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
- O. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.5 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Reglets: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated [ **with factory- mitered and -welded corners and junctions**].
  - 1. Manufacturers:
    - a. Fry Reglet Corporation.
  - 2. Material: **Galvanized steel, twenty-four [24] gauge**
  - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
  - 4. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
  - 5. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
  - 6. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
  - 7. Flexible Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
  - 8. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.
- B. Retro fit drains: Marathon Aluminum retro drain assembly, available with PVC or TPO coating.

## 2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
  2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with [**elastomeric**] [**butyl**] sealant concealed within joints.
- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual"**and FMG Loss Prevention Data Sheet 1-49**] for application but not less than thickness of metal being secured.

## 2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing Gravel Stop and Fascia Caps: Fabricate in minimum 96-inch- long, but not exceeding 10-foot- long, sections. Furnish with 6-inch- wide joint cover plates.
1. Joint Style: **Lap, 4 inches wide.**
- B. Copings: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and [**drill elongated holes for fasteners on**] interior leg. Miter corners, seal, and solder or weld watertight.
1. Joint Style: **Butt, with 12-inch wide concealed backup plate**
  2. Fabricate copings from the following material:
    - a. Galvanized Steel: Twenty-four [24] gauge in thickness.
- C. Counterflashing: Fabricate from the following material:
1. Galvanized Steel: Twenty-four [24] gauge thick.
- D. Flashing Receivers: Fabricate from the following material:
1. Galvanized Steel: Twenty-four [24] gauge thick TPA coated metal.
- E. Roof-Penetration Flashing: Fabricate from the following material:
1. 4lb. leas sheet goods.

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
  - 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
  - 1. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
  - 1. Coat side of **lead** sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene underlayment.
  - 3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and **elastomeric** sealant.
- E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
  - 1. Space cleats not more than 12 inches (300 mm) apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with **elastomeric** sealant concealed within joints.
- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
  - 1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
  - 2. Aluminum: Use aluminum or stainless-steel fasteners.
  - 3. Copper Use copper or stainless-steel fasteners.
  - 4. Stainless Steel: Use stainless-steel fasteners.
- H. Seal joints with **elastomeric** sealant as required for watertight construction.
  - 1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
  - 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."
- I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm) except where pretinned surface would show in finished Work.
  - 1. Do not solder **prepainted**, sheet.
  - 2. PretStainless-Steel Soldering: Pretin edges of uncoated sheets to be soldered using solder recommended for stainless steel and phosphoric acid flux. Promptly wash off acid flux residue from metal after soldering.
  - 3. Copper Soldering: Tin uncoated copper surfaces at edges of sheets using solder recommended for copper work.
  - 4. Where surfaces to be soldered are lead coated, do not tin edges, but wire brush lead coating before soldering.
  - 5. Lead-Coated Copper Soldering: Wire brush edges of sheets before soldering.
  - 6. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

- J. Aluminum Flashing: Rivet or weld joints in uncoated aluminum where necessary for strength.

### 3.3 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements [, **sheet metal manufacturer's written installation instructions,**] and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.
1. Interlock bottom edge of roof edge flashing with continuous cleats anchored to substrate at **24-inch** centers.
- C. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for **elastomeric** sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with **elastomeric** sealant. **Furnish and install new skirt flashings.**
1. Secure in a waterproof manner by means of **snap-in installation and sealant or lead wedges and sealant, interlocking folded seam or blind rivets and sealant, anchor and washer at 36-inch centers.**
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:
1. Furnish and install [n] lead flashing and strip into [n] roof AG Bio.
  2. Seal with **elastomeric** sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.
  3. OPTION: Clean and prime penetration/projection: Apply base coat of AG Bio @ two [2] gallons per 100 square feet. While base still wet, embed polyester reinforcement and allow to cure. Apply AG Bio top @ the rate of two [2] gallons per 100 square feet.

### FLASHING INSTALLATION

- F. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- G. Counterflashings/termination metal: Furnish and install [n] twenty-four [24] gauge GSM counterflashings termination metal and secure as specified. Metal to be Kynar with approved color unless otherwise stated.

- H. Skirt metal: Furnish and install [n] GSM skirt metal under [e] counterflashing face and secure to twelve [12] inches O.C. Metal to be GSM, paint ready with approved color unless otherwise stated.
- I. Metal: General: Shall be 24 gauge GSM metal coping unless otherwise directed. GSM shall be made paint ready. Color to be approved by owner
- J. Perimeter edge metal/gravelstop: GSM 24 gauge metal, paint ready.
- K. Gutters and downspouts: Replacement as required: Furnish and install [n] gutters and downspouts. Size to match [e]. Metal to be "paint ready". Replace damaged gutters/downspouts as directed by owner.

### 3.4 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620



SECTION 07 92 00 – JOINT SEALANTS

GENERAL

- 1.01 RELATED DOCUMENTS: Drawings and contract documents, including Section 01 1000 SUMMARY, apply to this section.
- 1.02 SECTION INCLUDES: The requirements and application procedures for the installation of sealant materials.
- 1.03 RELATED SECTIONS
- A. Section 01 1000 Summary
  - B. Section 01 7700 Closeout Procedures
  - C. Section 02 4119 Selective Demolition
  - D. Section 06 1053 Miscellaneous Carpentry
  - E. Section 07 2200 Roof and Deck Insulation
  - F. Section 07 6200 Sheet Metal Flashing and Trim
- 1.05 DELIVERY, STORAGE AND HANDLING
- A. Delivery of Materials:
    - 1. Deliver materials to job-site in new, dry, unopened and well-marked containers showing product and manufacturers name.
    - 2. Deliver materials in sufficient quantity to allow continuity of work.
    - 3. Coordinate delivery with project superintendent.
  - B. Do not order project materials or start work before receiving Owner's written notice to proceed. No work shall commence without signed contracts.
  - C. Storage of Materials:
    - 1. Store materials marked "KEEP FROM FREEZING" in areas where temperatures will remain above 40 degrees F.
    - 2. Do not store materials in open or in contact with ground or roof surface.
    - 3. Store all materials on a raised platform covered with secured canvas tarpaulin (not polyethylene), top to bottom. Cover all materials when project is not in progress and maintain the ability at all times to cover the materials when required, such as during an unanticipated rain shower.
    - 4. Subcontractor shall assume full responsibility for the protection and safekeeping of products stored on premises.

## 1.06 ENVIRONMENTAL CONDITIONS

- A. Environmental requirements:
  - 1. Do not work in rain, snow, or in presence of water.
  - 2. Do not work in temperatures below 40 degrees F.
  - 3. Do not install materials marked "KEEP FROM FREEZING" when daily temperatures are scheduled to fall below 40 degrees F.
  - 4. Do not perform masonry work below 40 degrees F.
  - 5. Remove any work exposed to freezing.
  - 6. Coordinate with project superintendent when volatile materials are to be used near air ventilation intakes so owner can use some or all of the following methods to minimize disruptions to building occupants and operations:
    - a. Divert air intake from work area by attaching scoops or temporary ductwork.
    - b. Temporarily shut down or block air intakes.
    - c. Provide make-up air or intake air from sources away from work area.

## PART 2 - PRODUCTS

### 2.01 GENERAL

- A. Comply with quality control, references, specifications, and manufacturer's data. Products containing asbestos are prohibited on this project. Use only asbestos-free products.
- B. Use products with personal protection. User must read container label and material safety data sheets prior to use.
- C. All surfaces must be sound, clean, dry and free from contamination. A thorough wire brushing, grinding, sandblasting or solvent cleaning may be required to expose clean, sound, virgin surfaces. All coverage rates listed are approximate and may differ depending upon texture of the substrate finish. Any questions regarding drying times, coverage rates, primers and unique application techniques should be directed to the Tremco Technical Services or local Tremco Field Representative.

### 2.02 MANUFACTURER

- A. Sealant primers and sealants meeting roofing manufacturer's requirements from the following manufacturer or approved equal: Tremco Incorporated, Beachwood, OH 216/292-5000.

### 2.03 SYSTEM COMPONENTS

- A. Primers for Sealant:
  - 1. TremPrime Non-Porous Primer by Tremco Inc.
    - a. A low-VOC, water-based, quick-drying, one-part primer.
    - b. Used as a primer for metals and plastics and other non-porous surfaces prior to applying urethane sealants.
    - c. TremPrime Non-Porous Primer is not a film-forming primer.
  - 2. Primer # 171 by Tremco Inc.

- a. Quick-drying, one-part, moisture-curing primer.
  - b. Used as an adhesion promoter for urethane sealants on porous surfaces such as concrete and wood.
- B. Sealants:
  - 1. TremSEAL D Polyurethane Sealant by Tremco Inc.
    - a. General purpose, one-component, moisture-curing, high performance and VOC compliant polyurethane joint sealant.
    - b. Meets U.S. Federal Specification TT-S-00230C, Type II, Class A and ASTM C 920-79, Type S, Grade NS, Class 25. Use NT, M, T, A, O and CAN/CGS B-19.13-M87.
    - c. Color: As selected by owner.
  - 2. Reglet Joint Sealant by Tremco Inc.
    - a. Single component bitumen-modified, moisture-curing polyurethane sealant. Reglet Joint Sealant is asbestos-free.
    - b. Meets or exceeds the performance requirements of ASTM C836-84
    - c. Color: Black
  - 3. TremSEAL HP Elastomeric Sealant by Tremco Inc.
    - a. General purpose, vertical grade, multi- component and non-sag polyurethane sealant.
    - b. Meets U.S. Federal Specification TT-S-00227E, Class A, Type II, and ASTM C 920, Type M, Grade NS, Class 25, Use NT, M, A, and O. CAN/CGSB 19.24-M90 TYPE II, CLASS B.
    - c. Color: As selected by owner.

## 2.04 RELATED PRODUCTS

- A. Backer Rod:
  - 1. Joint backing rod, closed cell polyethylene, non-bleeding neoprene, or butyl.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Verify conditions as satisfactory to receive work.
- B. Do not begin work until all unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions.

### 3.02 GENERAL WORKMANSHIP

- A. All work performed by subcontractor shall conform to this specification.
- B. The presence and activity of the manufacturer's representative, architect's representative, and/or owner's representative shall in no way relieve subcontractor of contract responsibilities or duties.
- C. Substrate temperature shall be within 50 degrees F to 110 degrees F for product application.

At no time shall temperature exceed 110 degrees F during application and cure.

### 3.03 SURFACE PREPARATION

- A. The surface of joints to receive sealants shall be free of all frost, condensation and moisture. Oil, grease dirt, chalk, particles of mortar, dust, loose mill scale, caulking and other foreign substances shall be removed from surfaces of joints to be in contact with the sealant. Oil and grease shall be removed with solvent and surfaces shall be wiped dry with clean clothes. All surfaces shall be ground free of existing sealants, caulking and abraded to clean mortar or stone.
- B. Remove loose particles present or resulting from grinding, abrading or blast cleaning by sweeping particles out with a dry brush, blowing out joints with oil free compressed air or by vacuuming joints prior to solvent cleaning.
- C. Clean only as much area that can be primed, packed and caulked in a single day.

### 3.04 MASONRY SURFACE PREPARATION

- A. Vertical surfaces must be cleaned of laitance, dirt, dust, oil, grease efflorescence, alkaline coatings and all other contaminants. Replace any loose, weak or soft mortar and allow 72 hours cure time prior to application.

### 3.05 PRIMER APPLICATION

- A. TremPrime Non-Porous Primer:
  - 1. Do not apply over contaminated or damp surfaces. Do not thin primer.
  - 2. Apply with a clean cloth. Remove all excess primer from cloth to ensure a very thin layer is applied.
  - 3. Dry time is 15 minutes at 70 degrees F.
  - 4. Primer must be completely dry before applying sealant or coating.
  - 5. Urethane sealants can be applied up to 8 hours after primer has been applied. After 8 hours, the surface must be cleaned with MEK or Xylene and re-primed with TremPrime Non-Porous Primer.
  - 6. Coverage Rate: 1,400 – 1,800 square feet per gallon.
- B. Primer #171:
  - 1. Do not apply over contaminated or damp surfaces. Do not thin primer.
  - 2. Apply generously with a clean brush or roller. Do not apply in excess where it will puddle or pond.
  - 3. At 70 degrees F, allow 30 - 45 minutes for primer to become tacky before applying sealant. Do not allow primer to dry completely.
  - 4. Do not apply sealant if primer becomes hard or glossy. If it does, clean with Xylene and coat with Vulkem Primer No. 191.
  - 5. Coverage Rate: 100 – 600 square feet per gallon.

### 3.06 INSTALLATION OF BACKER-ROD MATERIAL

- A. When using backup material comprised of tubular or rod stock, avoid lengthwise stretching of the material. Do not twist or braid backer material.
- B. Backer Rod Size:
  - 1. Install a 3/4 inch diameter backer rod for joint widths ranging from 3/8 inch to 1/2 inch and 1- inch diameter backer rod for 5/8 inch to 3/4 inch joint widths.
- C. Installation:
  - 1. Do not puncture the exterior skin or surface of the backer material.
  - 2. For installation of backup material, provide a blunt-surfaced tool of wood or plastic, having shoulders designed to ride on the adjacent finished surface and a protrusion of the required dimensions to assure uniform depth of backup material below the sealant.
  - 3. Do not, under any circumstance, use a screwdriver or similar tool for this purpose.
  - 4. Using the approved tool, smoothly and uniformly place the backup material to the depth indicated on the drawings or otherwise required, compressing the backer material 25 percent to 50 percent and securing a positive fit. Do not insert the depth of the backer material beyond 1/2 inch.

### 3.07 INSTALLATION OF SEALANTS

- A. Prior to start of installation of each joint, verify that the required proportion of width of joint to depth of joint ration has been secured.
  - 1. One-part low modulus sealant joint size criteria:
    - a. Minimum size of joint shall be four times the anticipated movement.
    - b. Joint depth to be 1/4 inch for joints 1/4 inch to 1/2 inch in width.
    - c. Maximum joint size approximately 1-1/4 inch width x 3/8 inch depth in a single application.
    - d. Coverage Rate:
      - (1) The size of the joint will dictate the actual coverage.
  - 2. Two-part polyurethane sealant joint size criteria:
    - a. Thoroughly mix components according to directions on container.
    - b. Minimum size of joint shall be four times the anticipated movement.
    - c. Sealant depth shall not exceed width for joints 1/2 inch wide or less.
    - d. Sealant depth shall be less than 1/2 inch for joints wider than 1/2 inch.
    - e. Minimum joint size is 1/4 inch by 1/4 inch. Maximum joint size is 1/2 inches wide by 5/8 inch deep in a single application.
    - f. Coverage Rate:
      - (1) The size of the joint will dictate the actual coverage.
- B. Equipment:

1. Apply sealant under pressure with power actuated hand gun or manually operated hand gun, or by other appropriate means.
  2. Use guns with a nozzle of proper size, and providing sufficient pressure to completely fill the joints as designed.
  3. If multi-component sealants are used, a two blade mixing paddle is required in the mixing process.
- C. Thoroughly and completely mask joints where the appearance of primer or sealant on adjacent surfaces would be objectionable.
- D. Temperature: Install all work of this section when substrate surface temperature is above 40°F and below 140 degrees F unless the applicator obtains prior approval from the sealant manufacturer to install material outside of this temperature range.
- E. Moisture: Do not apply work of this section on surfaces which are wet, damp, or have frost.
- F. Install the sealant in strict accordance with the manufacturer's recommendations, thoroughly filling joints to the recommended width and depth.
- G. Dry tool exposed joints to force material against backing material causing the caulking to obtain full surface contact with the joint interfaces. Finished joint will have a slightly concave surface, be uniform and neatly finished.
- H. Cleaning up:
1. Remove masking tape immediately after joints have been tooled.
  2. Keep clean adjacent surfaces free from excess sealant as the installation progresses, using solvent or cleaning agent recommended by the sealant manufacturer.
  3. Upon completion of the work of this section, promptly remove from the job site all debris, empty containers, and surplus material derived from this portion of the work.

### 3.08 ADJUSTING AND CLEANING

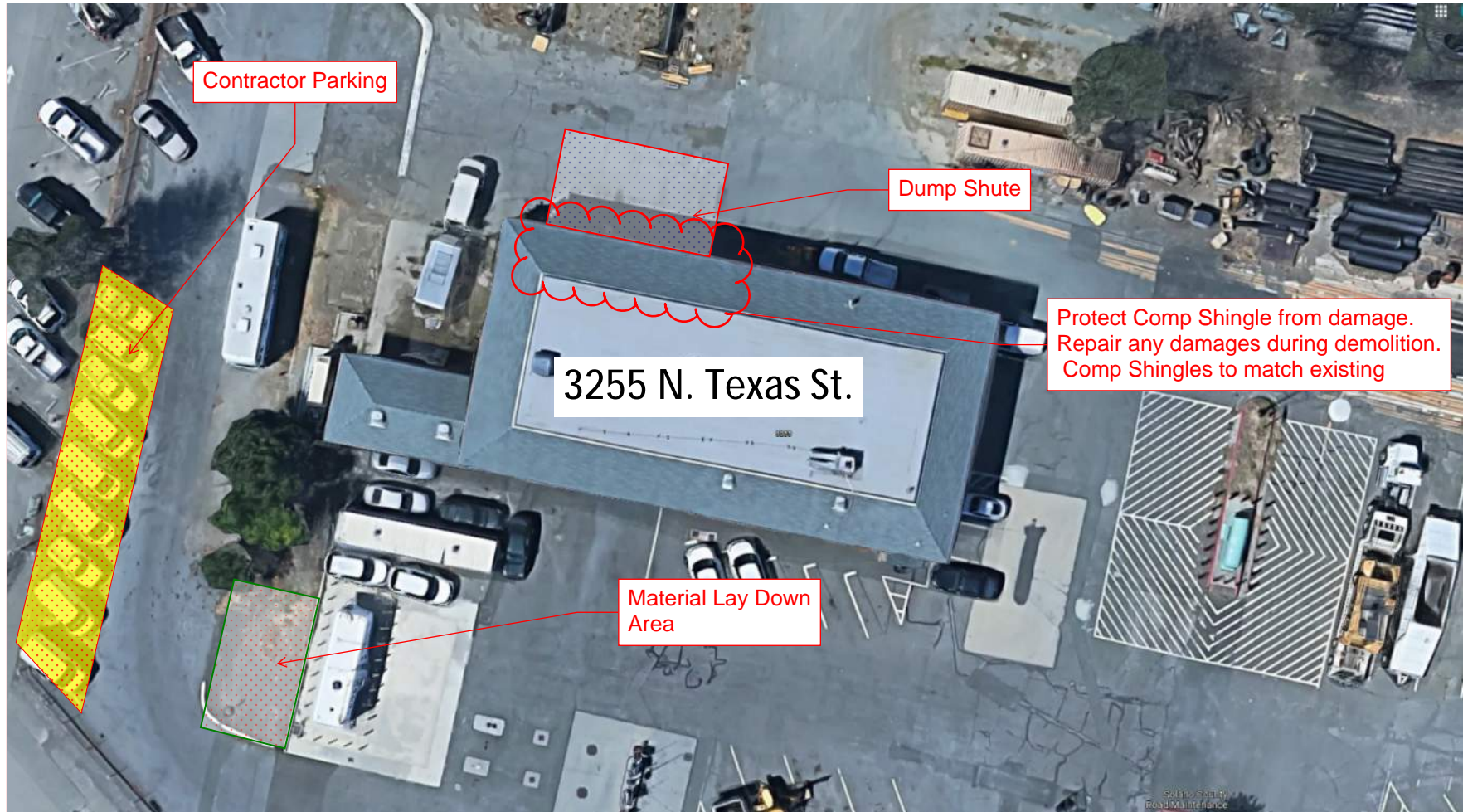
- A. Repair of deficiencies:
1. Installations of details noted as deficient during final inspection must be repaired and corrected by applicator, and made ready for reinspection, within five (5) working days.
- B. Clean-up:
1. Immediately upon job completion, roof membrane, flashing surfaces, ground and surrounding areas shall be cleaned of debris.

### **END OF SECTION**



**DOCUMENTATION 3**  
**SITE UTILIZATION PLAN**

**Fleet Heavy Equipment Roof Replacement**  
**3255 N. Texas St. Fairfield, CA 94533**  
**SITE UTILIZATION PLAN**



**BID SET (03/18/2022)**

DOCUMENTATION 4  
SUBTRONIC REPORT



## GPR REBAR LOCATION REPORT

**Date:** 7/14/2021

**Date of Inspection:** 7/08/2021

**Client:** Capital Projects Mgmt.  
Solano County  
675 Texas Street, #2500  
Fairfield, CA. 94533

**FOR REFERENCE ONLY**

**Site Address:** 3255 N Texas Street  
Fairfield, CA

**Reason for Inspection:** Locate and mark rebar in a 9'3"x6' section of a CMU wall to provide information to Solano County which they can use to determine where and how to anchor a ladder to the wall.

**Investigations:** The wall was scanned using a GSSI Structure Scan Mini XT. Passes were made horizontally and vertically at approximately 18" intervals. The results were transferred to the wall with blue tape. In addition to rebar, it was requested that Subtronic attempt to determine whether the CMU cells had been filled with grout

**Conclusions:** Vertical rebar was found to be spaced from 12" to 18" intervals. For the vertical sections, the rebar was found at a depth range of 1"-3" beneath the surface. Horizontal rebar was found to be spaced from 16" to 24" intervals. For the horizontal sections, the rebar was found at a depth range of 1.5"-2.75" beneath the surface.

In the area around the vent, there was additional reinforcement which was not consistent with the overall rebar spacing.

In the area around the vent, it could be seen visually that the cells are grouted. No anomalies other than rebar were detected. This consistency suggests that all cells scanned are likely to be grouted.

**Recommendations:** It is recommended that test cores be performed to confirm the suspicion that cells are indeed grouted prior to anchoring ladder to the wall.

For more information on the position, depth, and spacing of the observed rebar throughout the area, see the attached figures below.

**Report Prepared by: Ryan Forgie**

**Report QA by: Jon Taylor**

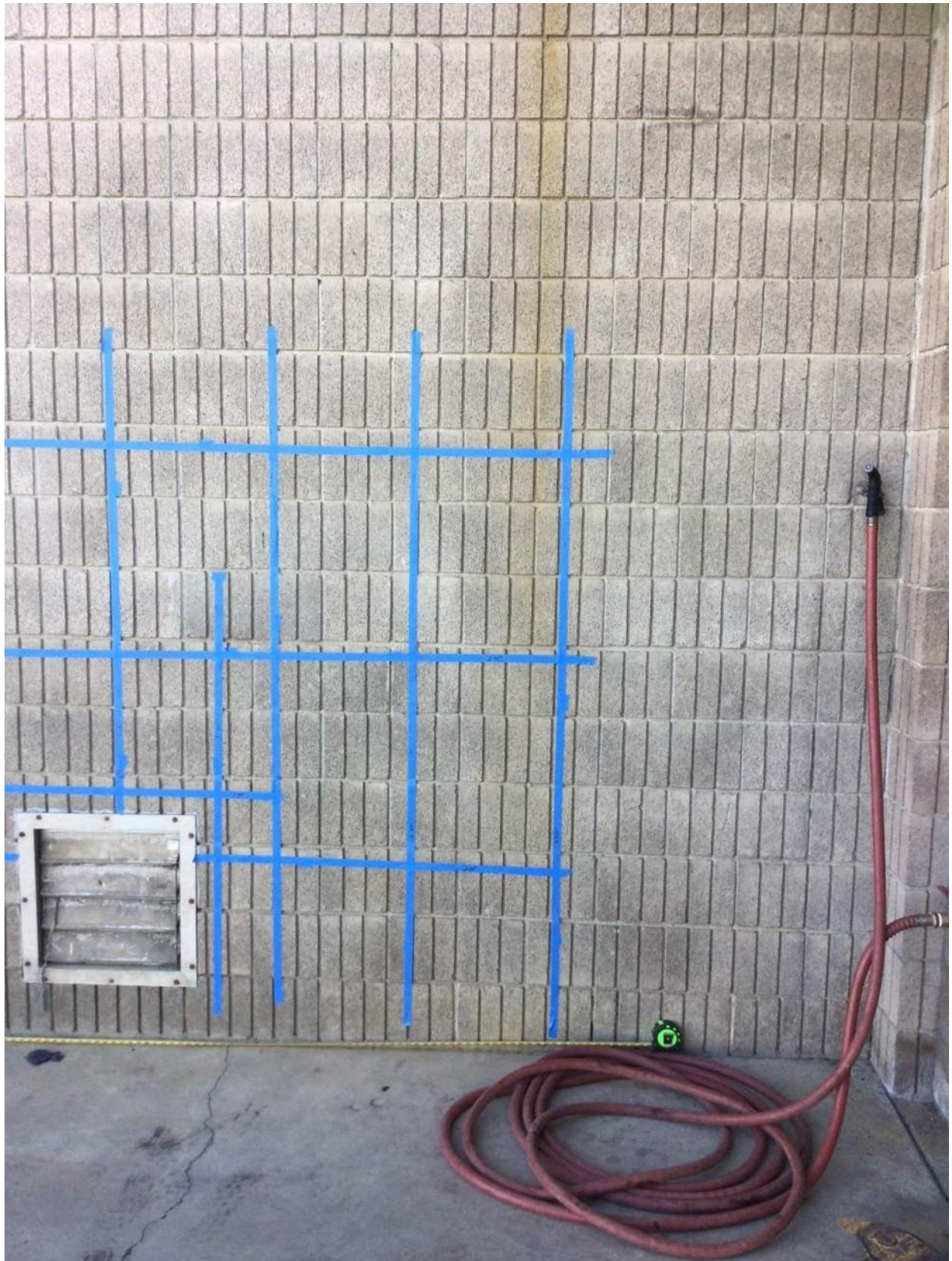
























**CORPORATION YARD # 1 Heavy Equipment Shop**  
 3255 North Texas Street, Fairfield, CA



**Transportation Ct**  
 Evacuation Area \*

W80

TRANSPORTATION PARKING  
 26,989.25 S.F.

MAIN BUILDING  
 ELECTRICAL  
 SHUT OFF

BUILDINGS & GROUNDS  
 PARKING 13,696.50 S.F.

GARAGE PARKING  
 40,194.82 S.F.

Propane Tank

BUILDING WATER SHUT OFF

BUILDING GAS SHUT OFF

OUTSIDE STORAGE  
 500 GALLON  
 ABOVE GROUND  
 WASTE OIL TANK

FIRE EXTINGUISHER

200 GALLONS  
 NEW MOTOR OIL TANK  
 ABOVE GROUND

EASEMENT

WASHRACK

FLOW

250 GALLONS  
 NEW MOTOR  
 OIL-TANK  
 ABOVE GROUND

FIRE EXTINGUISHER

TWO 12,000 GALLON  
 UNDER GROUND TANKS  
 ONE - DIESEL & ONE - GASOLINE

ELECTRICAL PANEL

FIRE EXTINGUISHER

YARD DRAIN

10,000 GALLON  
 ABOVE GROUND  
 E85 FUEL TANK

COMMON ACCESS AREA  
 33,724.33 S.F.

FUEL ISLAND  
 WITH DISPENSORS

TRANSPORTATION PARKING  
 25,536.66 S.F.

LOADING DOCK  
 318.40 S.F.

BUILDINGS & GROUNDS  
 4,078.78 S.F.

OPERATIONS  
 599.21 S.F.

TRANSPORTATION PARKING  
 10,728.98 S.F.

SURVEYS  
 934.95 S.F.

SOILS LAB  
 1,815.43 S.F.

SOILS LAB  
 PARKING  
 1,244.93 S.F.

PAINT SHOP  
 1950.96 S.F.

PAVED AREA PERIMETER

SCHOOL PARKING 2,475.00 S.F.

EASEMENT

**Solano County GIS Services**  
 Department of Information Technology  
 675 Texas Street, Suite 3700  
 Fairfield, CA 94533  
 Phone: 707-784-6340  
 Email: GISStaff@SolanoCounty.com  
 PRJ\_1241\_04/08/2015

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**CORPORATION YARD # 1 Heavy Equipment Shop**  
 3255 North Texas Street, Fairfield, CA



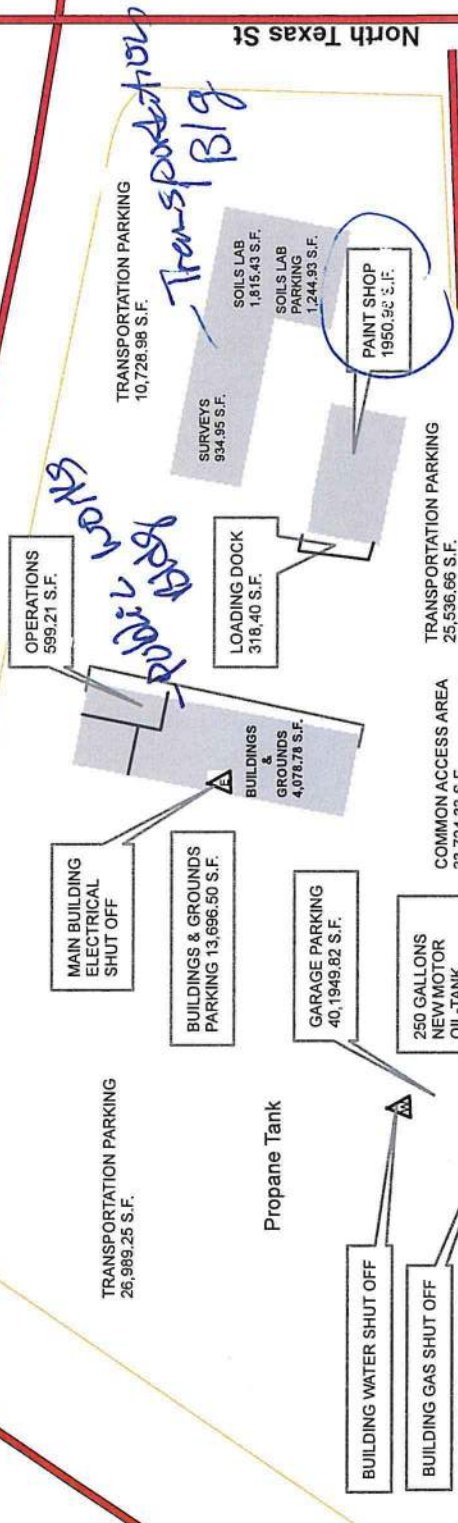
**Transportation Ct**

**Evacuation Area \***

W80

E80

North Texas St



**Solano County GIS Services**  
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FOR REFERENCE ONLY

# Pre-Renovation Asbestos and Lead Survey Report

Solano County Road Maintenance  
3255 North Texas Street  
Fairfield, California

November 15, 2017

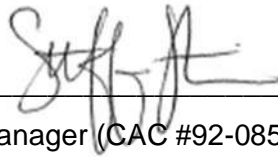
Terracon Project No. R1177C43

**Prepared for:**

Solano County  
Fairfield, California

**Prepared by:**

Terracon Consultants, Inc.  
Emeryville, CA



Steffen Steiner, Office Manager (CAC #92-0850, DPH Lead I/A #477)



William Frieszell, Sr. Industrial Hygienist (CAC #12-4853, DPH Lead I/A #23815)

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# Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities



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## Pre-Renovation Asbestos and Lead Survey

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



## EXECUTIVE SUMMARY

The following is a report of the pre-renovation building survey conducted by Brad Wallenberg and John Alexander, Certified Asbestos Consultants (CACs) and Department of Public Health (DPH) Lead Inspector/Assessors, with Terracon Consultants, Inc. (Terracon). The survey was performed on November 8, 2017 at the Solano County Road Maintenance facility located at 3255 North Texas Street in Fairfield, California.

The scope of the survey included the following four (4) buildings for the scheduled Public Works Building Gutter / Downspout Replacement Project:

- Transportation Building
- Public Works Building
- Paint Sign Shop
- Fleet Building

A total of ten (10) homogeneous, suspect asbestos-containing materials (ACMs) were identified during the survey that may be impacted by the scheduled work. None of the sampled materials tested positive for asbestos content. Table I in Section 3.0 of this report provides a summary of the suspect ACMs sampled. If materials not included in this report are identified during construction activities, then the materials should be sampled to determine asbestos content or assumed to contain asbestos.

Twenty-four (24) paint samples were collected from surfaces suspected to be lead containing at the four (4) buildings. All the paint samples were found to contain lead above the laboratory detection limit. A summary table of the lead sampling results is provided in Section 4.0.

## **PRE-RENOVATION ASBESTOS AND LEAD SURVEY**

**Solano County Road Maintenance**

**3255 North Texas Street**

**Fairfield, California**

**Terracon Project No. R1177C43**

**November 15, 2017**

### **1.0 SCOPE OF WORK**

The scope of the pre-renovation survey was as follows:

- n Conduct a pre-renovation survey of four (4) structures at 3255 North Texas Street in Fairfield to identify the presence of asbestos and lead that may be impacted by the scheduled Public Works Building Gutter / Downspout Replacement Project.
- n Collect a representative number of samples of suspect ACMs following an Asbestos Hazard Emergency Response Act (AHERA) protocol for sample collection for a demolition survey. Asbestos bulk samples were analyzed using polarized light microscopy (PLM) in accordance with EPA's July 1993 method for the determination of asbestos in bulk building materials - EPA 600/R-93/116.
- n Collect bulk samples of coatings suspected to be lead-containing. Paint samples were analyzed at an accredited laboratory by Flame Atomic Absorption (AA) for Total Lead reported in parts per million (ppm).
- n Submit written report including analytical results, regulatory requirements and recommendations.

#### **1.1 Reliance**

This report is for the exclusive use of the Solano County for the project being discussed. Reliance by any other party on this report is prohibited without written authorization of Terracon and Solano County. Reliance on this report by Solano County and all authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, this report and Terracon's Agreement for Services.

### **2.0 METHODS AND SAMPLING STRATEGY – ASBESTOS & LEAD**

#### **2.1 Visual Inspection**

Accessible building materials were visually inspected using the methods presented in the federal AHERA regulations (40 CFR, Part 763) as a guideline. AHERA was originally only applicable to schools, however State and Federal Occupational Safety and Health Administration (OSHA) have adopted the AHERA sampling methodology for all buildings subject to demolition or renovation.

## **2.2 Bulk Sampling and Analysis – Asbestos**

Bulk samples of suspect ACMs were collected from each homogeneous material. A homogeneous material is defined as a surfacing material, thermal system insulation, or miscellaneous material that is similar in size, color, texture and age of construction. Examples of homogeneous materials include:

- n Pipe insulation produced by the same manufacturer and installed during the same time period
- n Resilient flooring of identical color and pattern
- n Troweled on surfacing materials with similar textures

The buildings were visually inspected for the presence of suspect materials. As materials were identified, bulk samples were obtained with the aid of a coring device or other hand tool and placed into individual sample containers. Each sample was given a discreet identification number and recorded on field notes as well as chain of custody forms. Refer to Table I below and Appendix A for details on material sample locations and analytical results.

Asbestos bulk samples were transported under chain of custody procedures to EMLab P&K in Phoenix, Arizona. EMLab is accredited by the National Institute of Standards and Technology's National Voluntary Laboratory Accreditation Program (NVLAP).

All bulk samples were analyzed using polarized light microscopy (PLM) techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. Cal-OSHA defines asbestos containing construction materials (ACCM) as those materials having an asbestos content of greater than one tenth of one percent ( $> 0.1\%$ ).

When None Detected (ND) appears in this report, it should be interpreted as meaning no asbestos was observed in the sample material above the reliable limit of detection for the PLM method.

Note: under EPA assessment criteria, if a single sample of a homogeneous material tests positive for asbestos, then the entire homogeneous material is considered to be asbestos-containing.

## **2.3 Bulk Sampling and Analysis – Lead Paint**

Paint chip samples were collected using hand tools and were placed into individual sampling containers. Each sample was provided a discreet sample number and was recorded on a chain-of-custody form. Refer to Appendix B for details on sample locations and analytical results.

## Pre-Renovation Asbestos and Lead Survey

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



The samples were transported under chain of custody procedures to QuanTEM Laboratories, in Oklahoma City, Oklahoma. QuanTEM is accredited by the American Industrial Hygiene Association's (AIHA's) Environmental Lead Laboratory Accreditation Program (ELLAP) for the analysis of lead in paint chips, dust wipes, and/or soil.

All paint samples were analyzed for lead content using the Flame Atomic Absorption spectroscopy (FLAA) in accordance to EPA Method P EPA 7000B. When "<" appears in the lead sample report, it should be interpreted as meaning below analytical detection limit and no lead was detected in the sample.

### 3.0 ASBESTOS RESULTS

During the survey, a total of ten (10), suspect ACMs were sampled at the four (4) buildings. None of the materials were found to contain asbestos. The non-asbestos containing materials are listed in Table I below:

**TABLE I  
NON-ASBESTOS CONTAINING MATERIALS**

<b>Transportation Building</b>	
HM T-01 – Asphaltic roofing shingles over felt and mastic	HM T-02 – Exterior grey brick and white mortar
HM T-03 – Concrete wall panel	
<b>Public Works Building</b>	
HM PW-01 – Asphaltic roofing shingles over felt and mastic	HM PW-02 – Exterior grey brick and white mortar
<b>Paint Sign Shop</b>	
HM PSS-01 – Exterior grey brick and white mortar	HM PSS-02 – Asphaltic roofing shingles over felt and mastic
<b>Fleet Building</b>	
HM F-01 – Asphaltic roofing shingles over felt and mastic	HM F-02 – Exterior grey brick and white mortar
HM F-03 – Concrete wall panel	

**Pre-Renovation Asbestos and Lead Survey**

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



Laboratory reports and chain of custody documentation for the asbestos samples are provided in Appendix A.

## 4.0 LEAD RESULTS

Twenty-four (24) paint samples were collected from surfaces suspected to be lead containing at the four (4) buildings. All the paint samples were found to contain lead above the laboratory detection limit. A summary of the lead sampling results is provided in Table II below.

**TABLE II**  
**LEAD SAMPLE RESULTS**

Sample Number	Material Description / Sample Location	Results mg/kg (ppm)
<b>Transportation Building</b>		
T-Pb-01	Yellow Paint on metal downspout at south side	7,300
T-Pb-02	Yellow Paint on metal downspout at northeast corner	7,640
T-Pb-03	Yellow Paint on metal gutter at southeast corner	13,100
T-Pb-04	Yellow Paint on metal gutter at north side	9,060
T-Pb-05	Yellow Paint on wood fascia southeast corner	3,040
T-Pb-06	Yellow Paint on wood fascia at north side	3,060
<b>Public Works Building</b>		
PW-Pb-01	Yellow Paint on metal downspout at east side	5,040
PW-Pb-02	Yellow Paint on metal downspout at southeast corner	4,010
PW-Pb-03	Yellow Paint on metal gutter at east side	81,400
PW-Pb-04	Yellow Paint on metal gutter at north end of south roof	65,600
PW-Pb-05	Yellow Paint on wood fascia east side	3,150

**Pre-Renovation Asbestos and Lead Survey**

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



Sample Number	Material Description / Sample Location	Results mg/kg (ppm)
PW-Pb-06	Yellow Paint on wood fascia at north end of south roof	3,230
<b>Paint Sign Shop</b>		
PSS-Pb-01	Yellow Paint on metal downspout at southwest corner	11,200
PSS-Pb-02	Yellow Paint on metal downspout at northwest corner	5,270
PSS-Pb-03	Yellow Paint on metal gutter at southeast corner	55,400
PSS-Pb-04	Yellow Paint on metal gutter at northwest corner	57,700
PSS-Pb-05	Yellow Paint on wood fascia southeast corner	3,180
PSS-Pb-06	Yellow Paint on wood fascia at northwest corner	2,720
<b>Fleet Building</b>		
F-Pb-01	Beige Paint on concrete wall panel at north side	106
F-Pb-02	Yellow Paint on metal downspout at northeast corner	6,100
F-Pb-03	Yellow Paint on metal gutter at southeast corner	48,400
F-Pb-04	Yellow Paint on metal gutter at south end of north roof	139,000
F-Pb-05	Yellow Paint on wood fascia at southeast corner	2,490
F-Pb-06	Yellow Paint on wood fascia at south end of north roof	3,010

mg/kg= Milligram per kilogram, ppm = parts per million

The laboratory report and chain of custody documentation for the lead samples are provided in Appendix B.



## **5.0 REGULATORY OVERVIEW**

### **5.1 Asbestos**

The federal asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos-containing material (RACM).

The asbestos NESHAP regulation classifies ACM as either RACM, Category I non-friable ACM or Category II non-friable ACM. RACM includes all friable ACM, along with Category I and Category II non-friable ACM that has become friable, will be or has been subjected to sanding, grinding, cutting or abrading, or ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity. Category I non-friable ACM are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics and asphalt roofing products that contain more than 1% asbestos. Category II non-friable ACM are all other non-friable materials other than Category I non-friable ACM that contain more than 1% asbestos.

The Asbestos NESHAP program in California is enforced by federal, state, and county Asbestos NESHAP Coordinators. For projects occurring in the City of Fairfield, Bay Area Air Quality Management District (BAAQMD) has been delegated authority from the EPA to enforce the Asbestos NESHAP within its respective jurisdictional boundaries, excluding tribal lands.

The Cal-OSHA asbestos standard for construction (8 CCF 1529) regulates workplace exposure to asbestos. The OSHA standard requires that employee exposure to airborne asbestos must not exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) as an eight-hour time weighted average (TWA) and not exceed 1.0 fibers per cubic centimeter of air (1.0 f/cc) over a 30 minute time period known as an excursion limit (EL). The TWA and EL are known as Cal-OSHA's asbestos permissible exposure limits (PELs). The OSHA standard classifies construction and maintenance activities which could disturb ACM, and specifies work practices and precautions which employers must follow when engaging in each class of regulated work.

### **5.2 Lead-Containing Paint**

Cal-OSHA regulation 8 CCR 1532.1 established an "Action Level" for lead concentrations "in air" of 30 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) and a "Permissible Exposure Limit" for lead concentrations "in air" of 50  $\mu\text{g}/\text{m}^3$ . At this time, Cal-OSHA has not established limits for lead content

## Pre-Renovation Asbestos and Lead Survey

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



in bulk paint (non-airborne). Their interpretation on this issue is that any amount of lead may cause airborne concentrations above the established limits.

OSHA considers that surface coatings or materials that contain lead may constitute a health hazard to employees engaged in lead-related construction work. A negative exposure assessment should be conducted to determine if exposure during construction activities are below the required OSHA action and permissible levels.

Detectable lead quantities may constitute a lead dust hazard during renovation and demolition activities. Personnel performing renovation and demolition activities that may disturb painted components with concentrations of lead above the designated analytical detection limit should comply with all current OSHA regulations in order to minimize employee exposure. OSHA defines lead paint as a paint, which contains lead, regardless of the concentration. Currently, any proposed renovation or demolition is subject to the Cal-OSHA regulations (8 CCR 1532.1 – Lead in Construction). The Cal-OSHA regulation defines specific training requirements, engineering controls and working practices for construction personnel subject to this standard. Occupational exposure to lead occurring during the course of construction work, including maintenance activities, painting, alteration and repairs is subject to the OSHA Lead in Construction standard.

Construction work covered by Title 8 CCR 1532.1 includes any repair or renovation activities or other activities that disturb in-place lead-containing materials, but does not include routine cleaning and repainting where there is insignificant damage, wear, or corrosion of existing lead-containing coatings or substrates. Employers must assure that no employee will be exposed to lead at concentrations greater than 50  $\text{mg}/\text{m}^3$  averaged over an eight-hour period without adequate protection. The OSHA Standard also establishes an action level of 30  $\text{mg}/\text{m}^3$  which, if exceeded, triggers the requirement for medical monitoring.

The above overview is not intended to be inclusive of all potentially pertinent regulatory information. The relevant EPA and OSHA standards should be consulted prior to undertaking activities involving the demolition, renovation, or maintenance of surfaces coated with lead-containing paints.

## 6.0 RECOMMENDATIONS

The following are recommendations associated with impacts to lead-containing paint for the scheduled Public Works Building Gutter / Downspout Replacement Project.

- All personnel that will impact lead-containing paint should be trained, at a minimum, in accordance with the Cal-OSHA Lead In Construction standard (8 CCR 1532.1).
- Damaged lead-containing paint should be removed / stabilized prior to removal of building components or repainting.

## Pre-Renovation Asbestos and Lead Survey

Solano County ■ 3255 N. Texas Street, Fairfield, CA

November 15, 2017 ■ Terracon Project No. R1177C43



- n Lead safe work practices should be followed to prevent creating lead hazards during the project.
- n Metal building components (e.g. gutters) scheduled for removal should be shipped to a metal recycling facility. The contractor should notify the recycler that the components are coated in lead-containing paint.
- n Disposal of all lead-containing materials is regulated at concentrations at or exceeding 1,000 ppm as stated in 40 Code of Federal Regulations (CFR) Part 263 - Land Disposal Regulations and Title 22, Division 4 Environmental Health of the California Administrative Code. Lead containing materials that exceed 50 ppm must be additionally analyzed to determine possible landfill waste disposal restrictions with respect to lead.

## 7.0 LIMITATIONS

This asbestos and lead survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings and recommendations expressed in this report are based on conditions observed during our survey of the building. The information contained in this report is relevant to the date on which this survey was performed, and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information which may have been used in the preparation of this report. No warranty, express or implied is made.

## **APPENDIX A**

### **LABORATORY RESULTS & CHAIN OF CUSTODY – ASBESTOS**



Report for:

**Mr. Steffen Steiner**  
**RGA Environmental, Inc.**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1177C43; Solano County, 3225 N Texas Rd, Fairfield/Transportation Building  
EML ID: 1830784

Approved by:

Dates of Analysis:  
Asbestos PLM: 11-11-2017

Approved Signatory  
Renee Luna-Trepczynski

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: RGA Environmental, Inc.  
 C/O: Mr. Steffen Steiner  
 Re: R1177C43; Solano County, 3225 N Texas Rd,  
 Fairfield/Transportation Building

Date of Sampling: 11-08-2017  
 Date of Receipt: 11-10-2017  
 Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Total Samples Submitted:** 6

**Total Samples Analyzed:** 6

**Total Samples with Layer Asbestos Content > 1%:** 0

**Location: T-1 A, Cascading layered asphaltic roofing shingles over felt and mastic;  
 transportation building; exterior-southwest corner of roof**

Lab ID-Version‡: 8574746-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Shingle with Multicolored Pebbles	ND
Dark Brown Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	20% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: T-1 B, Cascading layered asphaltic roofing shingles over felt and mastic;  
 transportation building; exterior-northeast corner of roof**

Lab ID-Version‡: 8574747-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Shingle with Multicolored Pebbles	ND
Dark Brown Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	20% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: T-2 A, Exterior grey brick and white mortar; transportation building; exterior-  
 southwest corner of wall**

Lab ID-Version‡: 8574748-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: RGA Environmental, Inc.  
C/O: Mr. Steffen Steiner  
Re: R1177C43; Solano County, 3225 N Texas Rd,  
Fairfield/Transportation Building

Date of Sampling: 11-08-2017  
Date of Receipt: 11-10-2017  
Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Location: T-2 B, Exterior grey brick and white mortar; transportation building; exterior-northeast corner of wall**

Lab ID-Version‡: 8574749-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: T-3 A, Concrete wall panel; transportation building; exterior-southeast corner of wall**

Lab ID-Version‡: 8574750-1

Sample Layers	Asbestos Content
Gray Concrete with Tan Paint	ND
<b>Sample Composite Homogeneity:</b>	Good

**Location: T-3 B, Concrete wall panel; transportation building; exterior-southeast corner of wall**

Lab ID-Version‡: 8574751-1

Sample Layers	Asbestos Content
Gray Concrete with Tan Paint	ND
<b>Sample Composite Homogeneity:</b>	Good

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

001830784

## ACM BULK SAMPLE DATA SHEET

\* PLM Analysis

Page 1 of 28

Stop Analysis at First Positive

☒ Analyze All Samples

Point Count Analysis (400-point)

PM - W. Frieszell wvfrieszell@terracon.com	PM - K. Schmitt Kschmitt@terracon.com	PM - K. Schmitt Kschmitt@terracon.com
PM - T. Kattchee Tedd@terracon.com	PM - S. Steiner stefi@terracon.com	PM - W. Frieszell wvfrieszell@terracon.com

Project Name/Address	Solano County, 3225 N Texas Rd Fairfield/ Transportation Building					
RGA Project Number	K1177C43	Sampled By	B. Wallenberg/J. Alexander	Sampling Date	November 8, 2017	
Laboratory	EMLab	<input checked="" type="checkbox"/> Other	Turn Around Time	48	<input checked="" type="checkbox"/> Other (Specify)	

\*\*\*FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM) \*\*\* and bswallenberg@terracon.com

HM# 01	Material Description: Cascading Layered Asphaltic Roofing Shingles over Felt and Mastic	
Sample ID	Sample Location & Material Location	Quantity:
T-1 A	Transportation Building, Exterior - Southwest Corner of Roof	
T-1 B	Transportation Building, Exterior - Northeast Corner of Roof	
C		
Material Location:		
HM# 02	Material Description: Exterior Grey Brick and White Mortar	
Sample ID	Sample Location & Material Location	Quantity:
T-2 A	Transportation Building, Exterior - Southwest Corner of Wall	
T-2 B	Transportation Building, Exterior - Northeast Corner of Wall	
C		
Material Location:		
HM# 03	Material Description: Concrete Wall Panel	
Sample ID	Sample Locations	Quantity:
T-3 A	Transportation Building, Exterior - Southeast Corner of Wall	
T-3 B	Transportation Building, Exterior - Southeast Corner of Wall	
Material Location:		
HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
Material Location:		
HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
Material Location:		

NAME:	SIGNATURE:	COMPANY:	DATE:
Relinquished By:	Brad Wallenberg	Terracon	November 8, 2017
Received By:	Heidi Santos		NOV 08 2017
Relinquished By:	Fedex 945	K. Smith	11/10/17
Received By:			



Report for:

**Mr. Steffen Steiner**  
**RGA Environmental, Inc.**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1177C43; Solano County, 3225 N Texas Rd Fairfield/Public Works Building  
EML ID: 1830780

Approved by:

Dates of Analysis:  
Asbestos PLM: 11-11-2017

Approved Signatory  
Renee Luna-Trepczynski

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: RGA Environmental, Inc.  
 C/O: Mr. Steffen Steiner  
 Re: R1177C43; Solano County, 3225 N Texas Rd  
 Fairfield/Public Works Building

Date of Sampling: 11-08-2017  
 Date of Receipt: 11-10-2017  
 Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Total Samples Submitted:** 4

**Total Samples Analyzed:** 4

**Total Samples with Layer Asbestos Content > 1%:** 0

**Location: PW-01A, Cascading Layered Asphaltic Roofing Shingles With Felt And Mastic;  
 Public Works Building; Exterior; East Side Of Roof**

Lab ID-Version‡: 8574669-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Tar and Felt	ND
<b>Composite Non-Asbestos Content:</b>	20% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: PW-01B, Cascading Layered Asphaltic Roofing Shingles With Felt And Mastic;  
 Public Works Building; Exterior; North Side Of South Roof**

Lab ID-Version‡: 8574670-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Tar and Felt	ND
Brown/Black Roofing Tar and Felt	ND
<b>Composite Non-Asbestos Content:</b>	10% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: PW-02A, Exterior Grey Brick And White Mortar; Public Works Building;  
 Exterior; Northeast corner Of Building**

Lab ID-Version‡: 8574671-1

Sample Layers	Asbestos Content
Gray Brick	ND
White Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: RGA Environmental, Inc.  
C/O: Mr. Steffen Steiner  
Re: R1177C43; Solano County, 3225 N Texas Rd  
Fairfield/Public Works Building

Date of Sampling: 11-08-2017  
Date of Receipt: 11-10-2017  
Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Location: PW-02B, Exterior Grey Brick And White Mortar; Public Works Building;  
Exterior; Southeast Corner Of Building**

Lab ID-Version‡: 8574672-1

Sample Layers	Asbestos Content
Gray Brick	ND
White Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

001830780

## ACM BULK SAMPLE DATA SHEET

\* PLM Analysis

Page 4 of 28

\_\_\_ Stop Analysis at First Positive

X Analyze All Samples

\_\_\_ Point Count Analysis (400-point)

✓	PM - W. Frieszell wfrieszell@terracon.com	PM - R. Schroeder Karin@terracon.com	PM - A. ... Ken@terracon.com
	PM - T. Katchee Ted@terracon.com	✓	PM - S. Steiner steff@terracon.com
			PM - W. Frieszell wfrieszell@terracon.com

Project Name/Address	Solano County, 3225 N Texas Rd Fairfield/ Public Works Building					
RGA Project Number	R1177C43	Sampled By	J. Alexander/B. Wallenberg	Sampling Date	November 8, 2017	
Laboratory	EMLab	X Other	Turn Around Time	48 hrs	X Other (Specify)	

\*\*\*FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM) \*\*\* and bswallenberg@terracon.com

HM# 01	Material Description: Cascading Layered Asphaltic Roofing Shingles with Felt and Mastic	
Sample ID	Sample Location & Material Location	Quantity:
PW-01 A	Public Works Building, Exterior - East Side of Roof	
PW-01 B	Public Works Building, Exterior - North Side of South Roof	
C		
Material Location:		
HM# 02	Material Description: Exterior Grey Brick and White Mortar	
Sample ID	Sample Location & Material Location	Quantity:
PW-02 A	Public Works Building, Exterior - Northeast Corner of Building	
PW-02 B	Public Works Building, Exterior - Southeast Corner of Building	
C		
Material Location:		
HM#	Material Description:	
Sample ID	Sample Locations	Quantity:
A		
B		
C		
Material Location:		
HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
A		
B		
C		
Material Location:		

Relinquished By:	NAME: Brad Wallenberg	SIGNATURE:	COMPANY: Terracon	DATE: November 8, 2017
Received By:	Heidi Santos			NOV 09 2017
Relinquished By:	Fedex 945			11/10/17
Received By:				



Report for:

**Mr. Steffen Steiner**  
**RGA Environmental, Inc.**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1177C43; Solano County, 3225 N Texas Rd Fairfield/Transportation Building  
EML ID: 1830781

Approved by:

Dates of Analysis:  
Asbestos PLM: 11-11-2017

A handwritten signature in cursive script, reading "Renee Luna-Trepczynski".

Approved Signatory  
Renee Luna-Trepczynski

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

---

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Client: RGA Environmental, Inc.  
 C/O: Mr. Steffen Steiner  
 Re: R1177C43; Solano County, 3225 N Texas Rd  
 Fairfield/Transportation Building

Date of Sampling: 11-08-2017  
 Date of Receipt: 11-10-2017  
 Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Total Samples Submitted:** 4

**Total Samples Analyzed:** 4

**Total Samples with Layer Asbestos Content > 1%:** 0

**Location: PSS-01A, Grey Brick And White Mortar; Paint Sign Shop Building; Exterior;  
 Southwest Corner Of Roof**

Lab ID-Version‡: 8574688-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: PSS-01B, Grey Brick And White Mortar; Paint Sign Shop Building; Exterior;  
 Northeast Corner Roof**

Lab ID-Version‡: 8574689-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: PSS-02A, Cascading Layered Asphaltic Roofing Shingles With Felt And  
 Mastic; Paint Sign Shop Building; Exterior; Southeast Corner Of Roof**

Lab ID-Version‡: 8574690-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Tar	ND
Black Roofing Shingle with Black Pebbles	ND
Black Roofing Tar and Felt	ND
<b>Composite Non-Asbestos Content:</b>	15% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



Client: RGA Environmental, Inc.  
C/O: Mr. Steffen Steiner  
Re: R1177C43; Solano County, 3225 N Texas Rd  
Fairfield/Transportation Building

Date of Sampling: 11-08-2017  
Date of Receipt: 11-10-2017  
Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Location: PSS-02B, Cascading Layered Asphaltic Roofing Shingles With Felt And Mastic;  
Paint Sign Shop Building; Exterior; Northwest Corner Of Roof**

Lab ID-Version‡: 8574691-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Tar	ND
Black Roofing Shingle with Black Pebbles	ND
Black Roofing Tar and Felt	ND
<b>Composite Non-Asbestos Content:</b>	15% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

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# Terracon

1466 66<sup>th</sup> Street, Emeryville, Calif

001830781

## ACM BULK SAMPLE DATA SHEET

\* PLM Analysis

Page 2 of 4

Stop Analysis at First Positive

☒ Analyze All Samples

Point Count Analysis (400-point)

PM - W. Frieszell  
wtfrieszell@terracon.comPM - K. Karim  
Kkarim@regenv.com

Kkarim@regenv.com

PM - T. Kettebo  
Tkd11@regenv.comPM - S. Steiner  
ssteiner@regenv.comPM - W. Frieszell  
wtfrieszell@terracon.com

Project Name/Address	Solano County, 3225 N Texas Rd Fairfield/ Transportation Building				
RGA Project Number	RI177C43	Sampled By	B. Wallenberg/J. Alexander	Sampling Date	November 8, 2017
Laboratory		<input checked="" type="checkbox"/> Other	Turn Around Time	STD	<input checked="" type="checkbox"/> Other (Specify)

\*\*\*FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM) \*\*\* bswallenberg@terracon.com

HM#	01	Material Description:	Grey Brick and White Mortar
Sample ID		Sample Location & Material Location	Quantity:
PSS-01	A	Paint Sign Shop Building, Exterior - Southwest Corner of Roof	
PSS-01	B	Paint Sign Shop Building, Exterior - Northeast Corner Roof	
	C		
Material Location:			
HM#	02	Material Description:	Cascading Layered Asphaltic Roofing Shingles with Felt and Mastic
Sample ID		Sample Location & Material Location	Quantity:
PSS-02	A	Paint Sign Shop Building, Exterior - Southeast Corner of Roof	
PSS-02	B	Paint Sign Shop Building, Exterior - Northwest Corner of Roof	
	C		
Material Location:			
HM#		Material Description:	
Sample ID		Sample Locations	Quantity:
	A		
	B		
	C		
Material Location:			
HM#		Material Description:	
Sample ID		Sample Location & Material Location	Quantity:
	A		
	B		
	C		
Material Location:			
HM#		Material Description:	
Sample ID		Sample Location & Material Location	Quantity:
	A		
	B		
	C		
Material Location:			

	NAME:	SIGNATURE:	COMPANY:	DATE:
Relinquished By:	Brad Wallenberg		Terracon	November 8, 2017
Received By:	Heidi Santos			
Relinquished By:	Fedex 945	K. GRIFFIN		NOV 09 2017
Received By:				11/10/17



Report for:

**Mr. Steffen Steiner**  
**RGA Environmental, Inc.**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1177C43; Solano County, 3225 N Texas Rd Fairfield/Fleet Building  
EML ID: 1830777

Approved by:

Dates of Analysis:  
Asbestos PLM: 11-11-2017

A handwritten signature in cursive script, reading "Renee Luna-Trepczynski".

Approved Signatory  
Renee Luna-Trepczynski

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: RGA Environmental, Inc.  
 C/O: Mr. Steffen Steiner  
 Re: R1177C43; Solano County, 3225 N Texas Rd  
 Fairfield/Fleet Building

Date of Sampling: 11-08-2017  
 Date of Receipt: 11-10-2017  
 Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA 600/M4-82-020 & EPA METHOD 600/R-93-116**

Total Samples Submitted: 6

Total Samples Analyzed: 6

Total Samples with Layer Asbestos Content &gt; 1%: 0

**Location: 01A, Cascading Layered Asphaltic Roofing Shingles With Felt And Mastic;**  
**Fleet Building; Exterior; Southeast Corner South Roof**

Lab ID-Version‡: 8574639-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Shingle with Black Pebbles	ND
Dark Brown Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	20% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 01B, Cascading Layered Asphaltic Roofing Shingles With Felt And Mastic;**  
**Fleet Building; Exterior; South End of North Roof**

Lab ID-Version‡: 8574640-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Multicolored Pebbles	ND
Black Roofing Shingle with Black Pebbles	ND
Dark Brown Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	20% Cellulose 10% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 02A, Exterior Grey Brick And White Mortar; Fleet Building; Exterior;**  
**Southeast Corner Of Building**

Lab ID-Version‡: 8574641-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: RGA Environmental, Inc.  
C/O: Mr. Steffen Steiner  
Re: R1177C43; Solano County, 3225 N Texas Rd  
Fairfield/Fleet Building

Date of Sampling: 11-08-2017  
Date of Receipt: 11-10-2017  
Date of Report: 11-13-2017

**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

**Location: 02B, Exterior Grey Brick And White Mortar; Fleet Building; Exterior;  
Northwest Corner Of Building**

Lab ID-Version‡: 8574642-1

Sample Layers	Asbestos Content
Brown Brick	ND
Gray Mortar	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 03A, Concrete Wall Panel; Fleet Building; Exterior; North Wall**

Lab ID-Version‡: 8574643-1

Sample Layers	Asbestos Content
Gray Concrete with Tan Paint	ND
<b>Sample Composite Homogeneity:</b>	Good

**Location: 03B, Concrete Wall Panel; Fleet Building; Exterior; North Wall**

Lab ID-Version‡: 8574644-1

Sample Layers	Asbestos Content
Gray Concrete with Tan Paint	ND
<b>Sample Composite Homogeneity:</b>	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

001830777

## ACM BULK SAMPLE DATA SHEET

\* PLM Analysis

Page 3 of 4

\_\_\_ Stop Analysis at First Positive

☒ Analyze All Samples


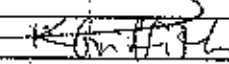
\_\_\_ Point Count Analysis (400-point)

PM - W. Frieszell wfrfrieszell@terracon.com	PM - K. Schroeter Karin@terracon.com	PM - K. Pilgrin Ken@terracon.com
PM - T. Kellhee Teck@terracon.com	PM - S. Steiner steiff@terracon.com	PM - W. Frieszell wfrfrieszell@terracon.com

Project Name/Address	Solano County, 3225 N Texas Rd Fairfield/ Fleet Building						
RG# Project Number	RI177C43	Sampled By	J. Alexander/B. Wallenberg	Sampling Date	November 8, 2017		
Laboratory	BMLab	<input checked="" type="checkbox"/> Other	Turn Around Time	48 hrs	<input checked="" type="checkbox"/> Other (Specify)		

\*\*\*FAX OR E-MAIL REPORT TO: SEE ABOVE PROJECT MANAGER (PM) \*\*\* and bswallenberg@terracon.com

HM# 01	Material Description: Cascading Layered Asphaltic Roofing Shingles with Felt and Mastic		
Sample ID	Sample Location & Material Location	Quantity:	
01 A	Fleet Building, Exterior - Southeast Corner South Roof		
01 B	Fleet Building, Exterior - South End of North Roof		
HM# 02	Material Description: Exterior Grey Brick and White Mortar		
Sample ID	Sample Location & Material Location	Quantity:	
02 A	Fleet Building, Exterior - Southeast Corner of Building		
02 B	Fleet Building, Exterior - Northwest Corner of Building		
HM# 03	Material Description: Concrete Wall Panel		
Sample ID	Sample Locations	Quantity:	
03 A	Fleet Building, Exterior - North Wall		
03 B	Fleet Building, Exterior - North Wall		
C			
HM#	Material Description:		
Sample ID	Sample Location & Material Location	Quantity:	
A			
B			
C			
Material Location:			
HM#	Material Description:		
Sample ID	Sample Location & Material Location	Quantity:	
A			
B			
C			

Relinquished By:	NAME: Brad Wallenberg	SIGNATURE: 	COMPANY: Terracon	DATE: November 8, 2017
Received By:	Heidi Santos			NOV 09 2017
Relinquished By:	Felix 925			11/10/17
Received By:				

## **APPENDIX B**

### **LABORATORY RESULTS & CHAIN OF CUSTODY – LEAD**





2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

## Environmental Chemistry Analysis Report

**Quantem Set ID:** 287295  
**Date Received:** 11/10/17  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** CR  
**Date of Report:** 11/13/17

**Client:** RGA Environmental  
1466 66th Street  
Emeryville, CA 94608

**Acct. No.:** C018

**Project:** Solano County, 3255 N Texas Rd, Fairfax/Gutt  
**Location:** N/A  
**Project No.:** R1177D41

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
001	T-Pb-01	Paint	Lead	7,300	49.1	ppm	11/13/17 11:36	P EPA 7000B (1)
002	T-Pb-02	Paint	Lead	7,640	50	ppm	11/13/17 11:36	P EPA 7000B (1)
003	T-Pb-03	Paint	Lead	13,100	49.5	ppm	11/13/17 11:36	P EPA 7000B (1)
004	T-Pb-04	Paint	Lead	9,060	49.6	ppm	11/13/17 11:36	P EPA 7000B (1)
005	T-Pb-05	Paint	Lead	3,040	50	ppm	11/13/17 11:36	P EPA 7000B (1)
006	T-Pb-06	Paint	Lead	3,060	49.7	ppm	11/13/17 11:36	P EPA 7000B (1)
007	PSS-PB-01	Paint	Lead	11,200	49.5	ppm	11/13/17 11:36	P EPA 7000B (1)
008	PSS-PB-02	Paint	Lead	5,270	50	ppm	11/13/17 11:36	P EPA 7000B (1)
009	PSS-PB-03	Paint	Lead	55,400	49	ppm	11/13/17 11:36	P EPA 7000B (1)
010	PSS-PB-04	Paint	Lead	57,700	49.1	ppm	11/13/17 11:36	P EPA 7000B (1)
011	PSS-PB-05	Paint	Lead	3,180	49.9	ppm	11/13/17 11:36	P EPA 7000B (1)
012	PSS-PB-06	Paint	Lead	2,720	49.6	ppm	11/13/17 11:36	P EPA 7000B (1)
013	F-Pb-01	Paint	Lead	106	48.9	ppm	11/13/17 11:36	P EPA 7000B (1)
014	F-Pb-02	Paint	Lead	6,100	49.8	ppm	11/13/17 11:36	P EPA 7000B (1)
015	F-Pb-03	Paint	Lead	48,400	49.4	ppm	11/13/17 11:36	P EPA 7000B (1)
016	F-Pb-04	Paint	Lead	139,000	49.1	ppm	11/13/17 11:36	P EPA 7000B (1)
017	F-Pb-05	Paint	Lead	2,490	49.3	ppm	11/13/17 11:36	P EPA 7000B (1)

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. Quantem is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified



2033 HERITAGE PARK DR, OKLAHOMA CITY, OK 73120 | 1.800.822.1650

## Environmental Chemistry Analysis Report

**Quantem Set ID:** 287295  
**Date Received:** 11/10/17  
**Received By:** Sherrie Leftwich  
**Date Sampled:**  
**Time Sampled:**  
**Analyst:** CR  
**Date of Report:** 11/13/17

**Client:** RGA Environmental  
1466 66th Street  
Emeryville, CA 94608

**Acct. No.:** C018

**Project:** Solano County, 3255 N Texas Rd, Fairfax/Gutt

**Location:** N/A

**Project No.:** R1177D41

AIHA ID: 101352

Quantem ID	Client ID	Matrix	Parameter	Results	Reporting Limits	Units	Date/Time Analyzed	Method
018	F-Pb-06	Paint	Lead	3,010	50	ppm	11/13/17 11:36	P EPA 7000B (1)
019	PW-PB-01	Paint	Lead	5,400	49.7	ppm	11/13/17 11:36	P EPA 7000B (1)
020	PW-PB-02	Paint	Lead	4,010	50	ppm	11/13/17 11:36	P EPA 7000B (1)
021	PW-PB-03	Paint	Lead	81,400	49	ppm	11/13/17 11:36	P EPA 7000B (1)
022	PW-PB-04	Paint	Lead	65,600	50	ppm	11/13/17 11:36	P EPA 7000B (1)
023	PW-PB-05	Paint	Lead	3,150	49.6	ppm	11/13/17 11:36	P EPA 7000B (1)
024	PW-PB-06	Paint	Lead	3,230	49.1	ppm	11/13/17 11:36	P EPA 7000B (1)

Authorized Signature:

Cherry Rossen, Technical Manager

Note: Sample results have not been corrected for blank values.

This report applies only to the standards or procedures indicated and to the specific samples tested. It is not indicative of the qualities of apparently identical or similar products or procedures, nor does it represent an ongoing assurance program unless so noted. These reports are for the exclusive use of the client and are not to be reproduced without specific written permission. Quantem is not responsible for user-supplied data used in calculations.

Unless otherwise noted, upon receipt the condition of the sample was acceptable for analysis.

Wipe materials must meet ASTM E1792 criteria. Method detection limits and resultant reporting limits may not be valid for non-ASTM E1792 wipe material.

EPA Method 7000B (1) = EPA 600/R-93/200 Preparation Modified. EPA 7000B Analysis Modified

EPA Method 7082 (2) = EPA 600/R-93/200 Preparation Modified. EPA 7082 Analysis Modified

# Supplemental Report

## QAQC Results

**QA ID:** 15783

**Test:** Lead

**Date:** 11/13/2017

**Matrix:** Paint

**Lab Number:** 287295

**Approved By:** Cherry Rossen

**Date Approved:** 11/13/2017

### Notes:

### Blank Data:

Type of Blank	Blank Value
FCB	0
ICB	0
Matrix Blank	0
Matrix Blank	0

### Standards Data:

Standard	Low Limit	Obtained	High Limit
CCV	4.5	4.8	5.5
FCV	4.5	4.9	5.5
ICV	0.9	1	1.1
RLVS	0.05	0.11	0.15

### Duplicate Data:

Sample Number	Result	Duplicate	% RPD
287295-024	6.587	6.371	3.3
287295-012	5.479	5.444	0.6

### Recovery Data:

Sample Number	Result	Spike Level	Result + Spike	% Recovery	Dup. Result + Spike	% Dup. Recovery	% Spike RPD
LCS-P1	0.000	1.965	1.604	81.6	1.640	83.5	2.3
LCS-P2	0.000	1.972	1.850	93.8	2.000	101.4	7.8

Authorized Signature:



Cherry Rossen, Technical Manager



1466 66<sup>th</sup> Street, Emeryville, California

# LEAD PAINT SAMPLE DATA SHEET

\* Lead Analysis

☒ Flame AA (EPA 7420)

☐ TTLC

Page 1 of 4

287295

✓	PM - S. Steiner Steff@rgaenv.com Fax: 510.899.7051	PM - K. Schroeter Karin@rgaenv.com Fax: 510.899.7063	PM - K. Pilgrim Ken@rgaenv.com Fax: 510.899.7053
	PM - T. Kattchee Tedd@rgaenv.com Fax: 510.899.7070	PM - W. Frieszell wmfrieszell@terracon.com	PM - M. Bryant marlin.bryant@rgaenv.com Fax: 510.899.7062

Project Name/Address	Solano County, 3255 N Texas Rd, Fairfax/Gutter Replacement/ Transportation Building						
RGA Project Number	R1177D4I	Sampled By	Brad Wallenberg	Sampling Date	November 8, 2017		
Laboratory	Quantem	<input checked="" type="checkbox"/> Other	Turn Around Time	48	<input checked="" type="checkbox"/> Other (Specify)		

Sample ID	Paint Description and Sample Location						Condition (I/F/P)
T-Pb-01	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Transportation Building	Unit:	South	Room:	Exterior	
T-Pb-02	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Transportation Building	Unit:	Northeast	Room:	Exterior	
T-Pb-03	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Transportation Building	Unit:	Southeast	Room:	Exterior	
T-Pb-04	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Transportation Building	Unit:	North	Room:	Exterior	
T-Pb-05	Paint Color:	Yellow	Substrate:	Wood	Component:	Fascia	P
	Bldg:	Transportation Building	Unit:	Southeast	Room:	Exterior	
T-Pb-06	Paint Color:	Yellow	Substrate:	Wood	Component:	Fascia	P
	Bldg:	Transportation Building	Unit:	North	Room:	Exterior	
	Paint Color:		Substrate:		Component:		I
	Bldg:		Unit:		Room:		

NAME:

SIGNATURE:

COMPANY:

DATE:

Relinquished By:	Brad Wallenberg		Terracon	November 8 2017
Received By:	Heidi Santos			NOV 09 2017
Relinquished By:				
Received By:				



# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

## LEAD PAINT SAMPLE DATA SHEET

\* Lead Analysis

☒ Flame AA (EPA 7420)

☐ TTLC

Page 2 of 4

✓	PM - S. Steiner Steff@rgaenv.com Fax: 510.899.7051	PM - K. Schroeter Karin@rgaenv.com Fax: 510.899.7063	PM - K. Pilgrim Ken@rgaenv.com Fax: 510.899.7053
	PM - T. Kattchee Tedd@rgaenv.com Fax: 510.899.7070	PM - W. Frieszell wmfrieszell@terracon.com	PM - M. Bryant marlin.bryant@rgaenv.com Fax: 510.899.7062

Project Name/Address	Solano County, 3255 N Texas Rd, Fairfax/Gutter Replacement/ Paint Sign Shop Building						
RGA Project Number	RI177C43	Sampled By	B.Wallenberg/J. Alexander	Sampling Date	November 8, 2017		
Laboratory	QuanTEM	<input checked="" type="checkbox"/> Other	Turn Around Time	48 hrs	<input checked="" type="checkbox"/> Other (Specify)		

Sample ID	Paint Description and Sample Location						Condition (I/F/P)
PSS-PB-01	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Paint Sign Shop Building	Unit:	Southwest	Room:	Exterior	
PSS-PB-02	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Paint Sign Shop Building	Unit:	Northwest	Room:	Exterior	
PSS-PB-03	Paint Color:	Yellow	Substrate:	Metal	Component:	Roof Gutter	P
	Bldg:	Paint Sign Shop Building	Unit:	Southeast	Room:	Exterior	
PSS-PB-04	Paint Color:	Yellow	Substrate:	Metal	Component:	Roof Gutter	P
	Bldg:	Paint Sign Shop Building	Unit:	Northwest	Room:	Exterior	
PSS-PB-05	Paint Color:	Yellow	Substrate:	Metal	Component:	Fascia	P
	Bldg:	Paint Sign Shop Building	Unit:	Southeast	Room:	Exterior	
PSS-PB-06	Paint Color:	Yellow	Substrate:	Metal	Component:	Fascia	P
	Bldg:	Paint Sign Shop Building	Unit:	Northwest	Room:	Exterior	
	Paint Color:		Substrate:		Component:		
	Bldg:		Unit:		Room:		

NAME:

SIGNATURE:

COMPANY:

DATE:

Relinquished By:	Brad Wallenberg	Terracon	November 8, 2017
Received By:	Heidi Santos		NOV 09 2017
Relinquished By:			
Received By:			

# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

## LEAD PAINT SAMPLE DATA SHEET

\* Lead Analysis

\_\_\_ Flame AA (EPA 7420)

\_\_\_ TTLC

Page 3 of 4

✓	PM - S. Steiner Steff@rgaenv.com Fax: 510.899.7051		PM - K. Schroeter Karin@rgaenv.com Fax: 510.899.7063		PM - K. Pilgrim Ken@rgaenv.com Fax: 510.899.7053
	PM - T. Kattchee Tedd@rgaenv.com Fax: 510.899.7070		PM - W. Frieszell wmfrieszell@terracon.com		PM - M. Bryant marlin.bryant@rgaenv.com Fax: 510.899.7062

Project Name/Address	Solano County, 3255 N Texas Rd, Fairfax/Gutter Replacement/ Fleet Building						
RGA Project Number	R1177C43	Sampled By	B. Wallenberg/J. Alexander	Sampling Date	November 8, 2017		
Laboratory	QuanTEM	<input checked="" type="checkbox"/> Other	Turn Around Time	48 hrs	<input checked="" type="checkbox"/> Other (Specify)		

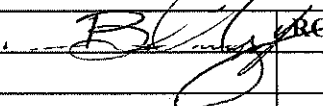
Sample ID	Paint Description and Sample Location						Condition (I/F/P)
F-Pb-01	Paint Color:	Beige	Substrate:	Concrete	Component:	Wall Panel	I
	Bldg:	Fleet Building	Unit:	North	Room:	Exterior	
F-Pb-02	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Fleet Building	Unit:	Northeast	Room:	Exterior	
F-Pb-03	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Fleet Building	Unit:	Southeast	Room:	Exterior	
F-Pb-04	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Fleet Building	Unit:	South	Room:	Exterior	
F-Pb-05	Paint Color:	Yellow	Substrate:	Metal	Component:		P
	Bldg:	Fleet Building	Unit:	Southeast	Room:	Exterior	
F-Pb-06	Paint Color:	Yellow	Substrate:	Wood	Component:		P
	Bldg:	Fleet Building	Unit:	South	Room:	Exterior	
	Paint Color:		Substrate:		Component:		
	Bldg:		Unit:		Room:		

NAME:

SIGNATURE:

COMPANY:

DATE:

Relinquished By:	William Frieszell		RGAE Environmental	August 12, 2011
Received By:	Heidi Santos			
Relinquished By:				
Received By:				



# Terracon

1466 66<sup>th</sup> Street, Emeryville, California

## LEAD PAINT SAMPLE DATA SHEET

\* Lead Analysis  
Flame AA (EPA 7420)  
TTLT

Page 4 of 4

✓	PM - S. Steiner Steff@rgaenv.com Fax: 510.899.7051		PM - K. Schroeter Karin@rgaenv.com Fax: 510.899.7063		PM - K. Pilgrim Ken@rgaenv.com Fax: 510.899.7053
	PM - T. Kattchee Tedd@rgaenv.com Fax: 510.899.7070	✓	PM - W. Frieszell wmfrieszell@terracon.com		PM - M. Bryant marlin.bryant@rgaenv.com Fax: 510.899.7062

Project Name/Address	Solano County, 3255 N Texas Rd, Fairfax/Gutter Replacement/ Public Works Building						
RGA Project Number	RI177C43	Sampled By	B. Wallenberg/J. Alexander	Sampling Date	November 8, 2017		
Laboratory	QuanTEM	X	Other	Turn Around Time	48 hrs	X	Other (Specify)


Sample ID	Paint Description and Sample Location						Condition (I/F/P)
PW-PB-01	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Public Works Building	Unit:	East	Room:	Exterior	
PW-PB-02	Paint Color:	Yellow	Substrate:	Metal	Component:	Downspout	I
	Bldg:	Public Works Building	Unit:	Southeast	Room:	Exterior	
PW-PB-03	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Public Works Building	Unit:	East	Room:	Exterior	
PW-PB-04	Paint Color:	Yellow	Substrate:	Metal	Component:	Gutter	P
	Bldg:	Public Works Building	Unit:	North End of South Roof	Room:	Exterior	
PW-PB-05	Paint Color:	Yellow	Substrate:	Wood	Component:	Fascia	P
	Bldg:	Public Works Building	Unit:	East	Room:	Exterior	
PW-PB-06	Paint Color:	Yellow	Substrate:	Wood	Component:	Fascia	P
	Bldg:	Public Works Building	Unit:	North End of South Roof	Room:	Exterior	

NAME:

SIGNATURE:

COMPANY:

DATE:

Relinquished By:	Brad Wallenberg		Terracon	November 8, 2017
Received By:	Heidi Santos			NOV 09 2017
Relinquished By:				
Received By:				

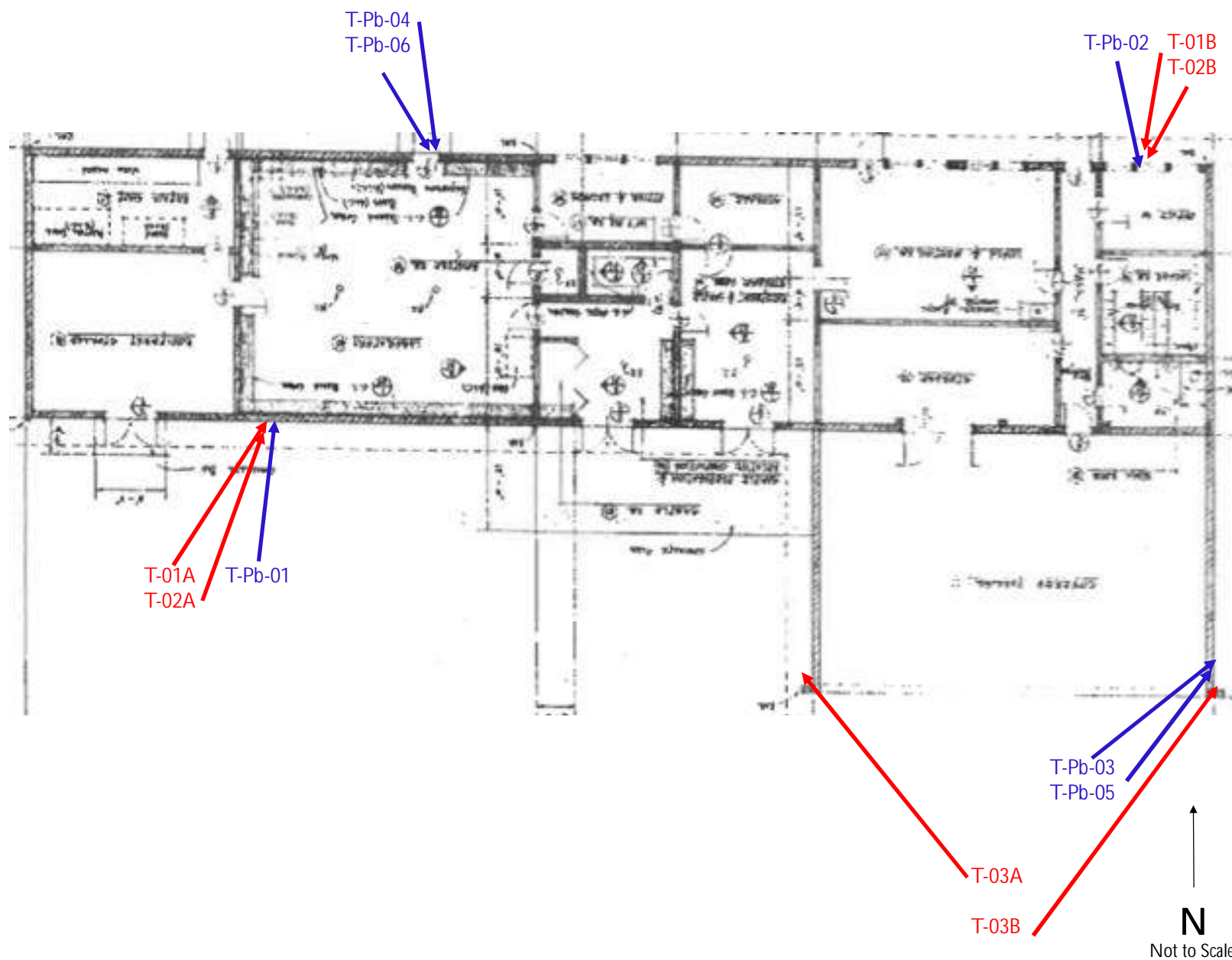
## **APPENDIX C**

### **SAMPLE LOCATION DRAWINGS**

## Solano County Road Maintenance Transportation Building

### Pre-Renovation Asbestos and Lead Survey

3255 N. Texas St., Fairfield

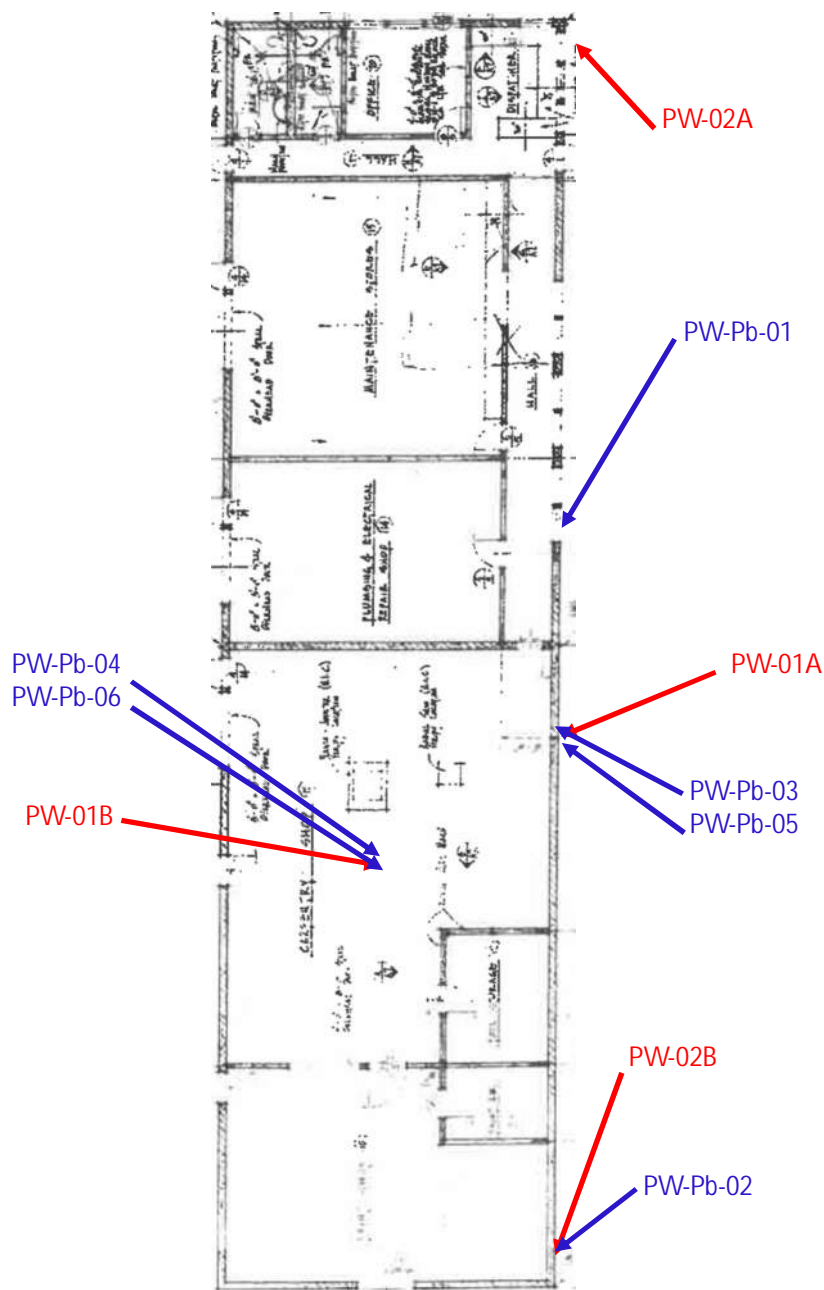


Date	Drafted By
November 2017	BSW
Project Number	Checked By
R1177C43	SS
Sheet Name	
Sample Location Diagram	
Sheet Number	
Figure 1	

## Solano County Road Maintenance Public Works Building

### Pre-Renovation Asbestos and Lead Survey

3255 N. Texas St., Fairfield



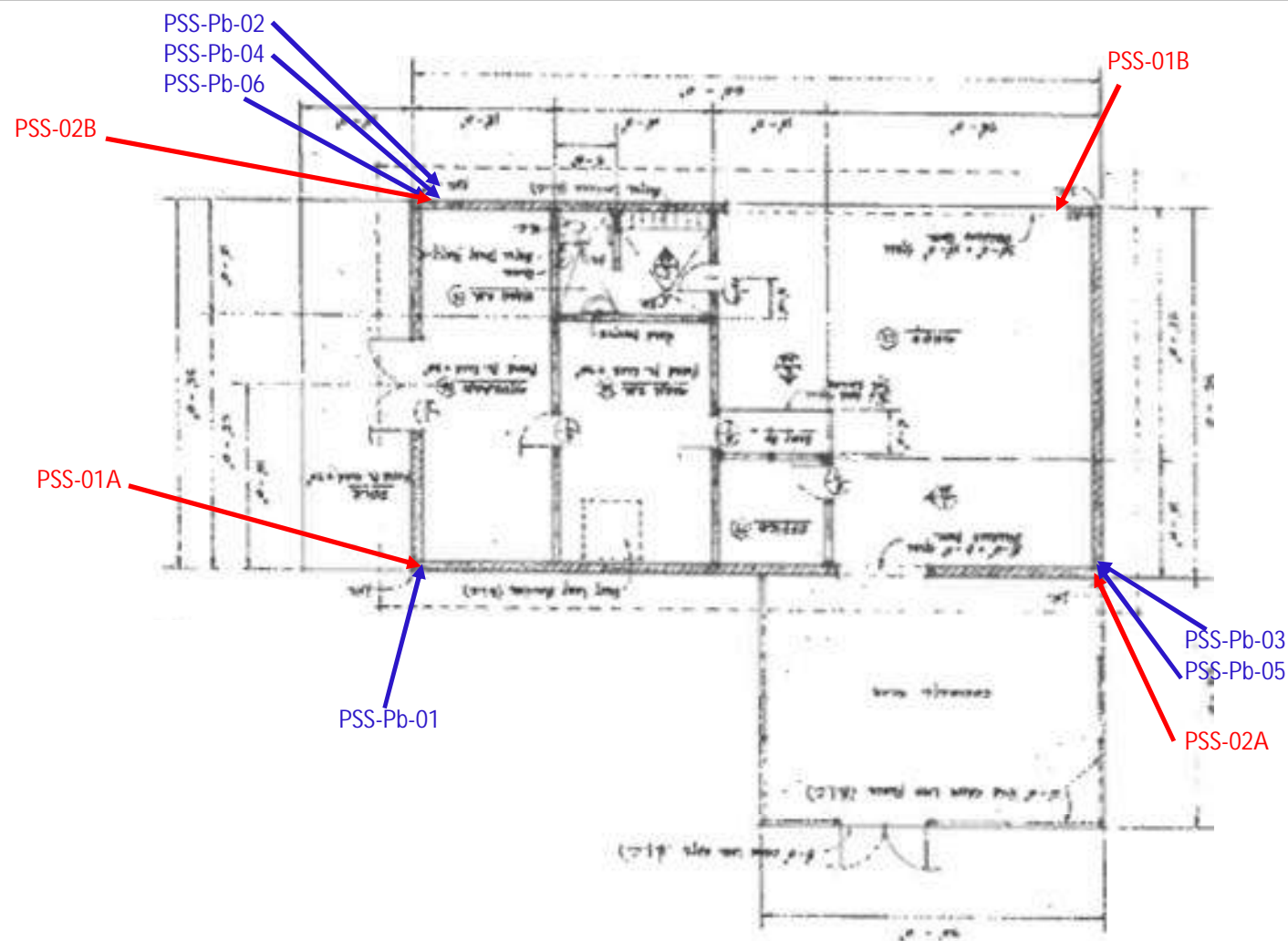
↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2017	BSW
<b>Project Number</b>	<b>Checked By</b>
R1177C43	SS
<b>Sheet Name</b> Sample Location Diagram	
<b>Sheet Number</b> Figure 2	

## Solano County Road Maintenance Paint Sign Shop

### Pre-Renovation Asbestos and Lead Survey

3255 N. Texas St., Fairfield



↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2017	BSW
<b>Project Number</b>	<b>Checked By</b>
R1177C43	SS
<b>Sheet Name</b>	
Sample Location Diagram	
<b>Sheet Number</b>	
Figure 3	

## Solano County Road Maintenance Fleet Building

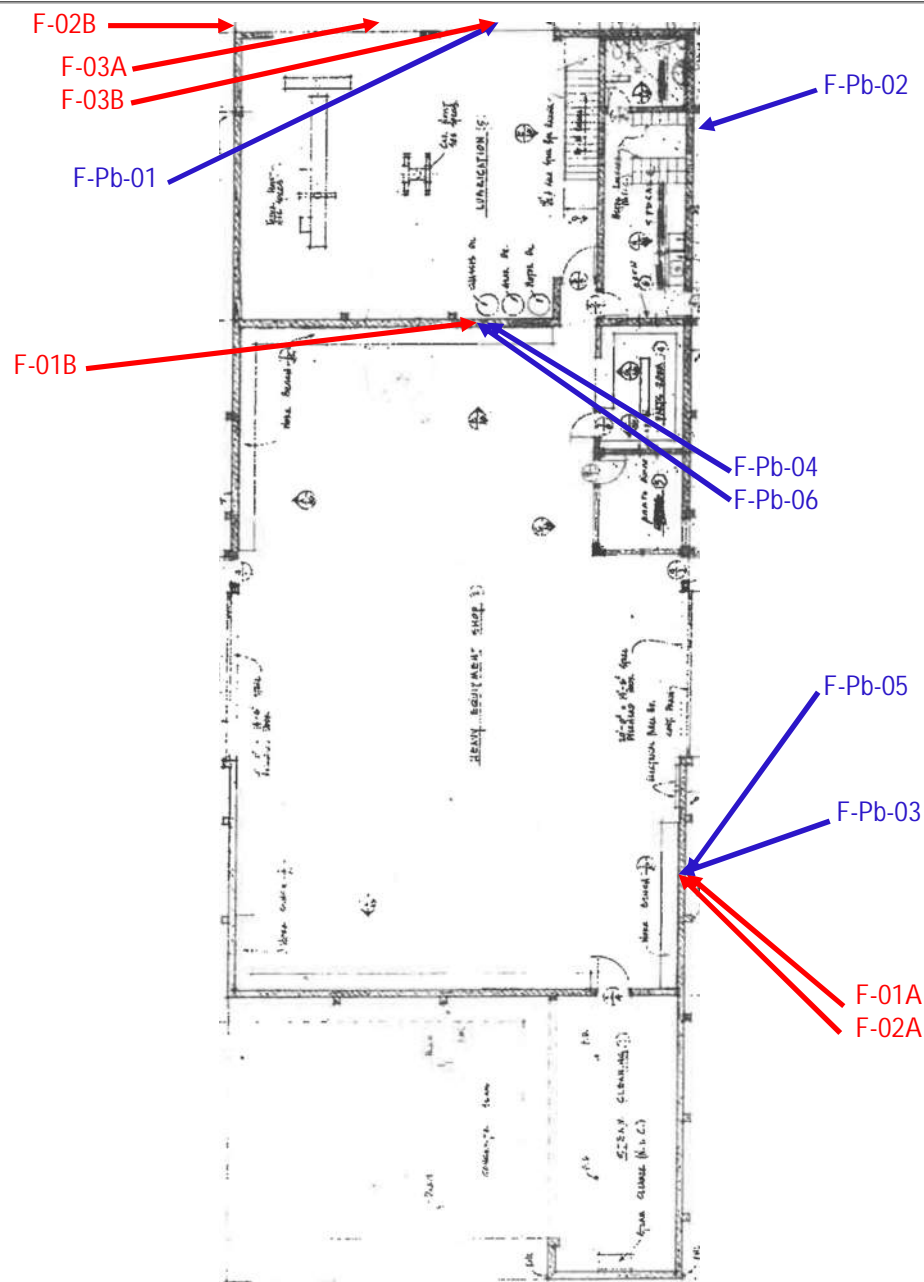
### Pre-Renovation Asbestos and Lead Survey

3255 N. Texas St., Fairfield

<b>Date</b>	<b>Drafted By</b>
November 2017	BSW
<b>Project Number</b>	<b>Checked By</b>
R1177C43	SS

**Sheet Name**  
Sample Location Diagram

**Sheet Number**  
Figure 4



N  
Not to Scale



**APPENDIX D**  
**TERRACON INSPECTORS CERTIFICATIONS**

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Brad S Wallenberg**

Name

Certification No. **17-5872**

Expires on **02/15/18**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



State of California Department of Public Health

Lead-Related  
Construction  
Certificate

Certificate  
Type

Expiration  
Date

Sampling Technician	05/03/2016
Inspector Assessor	05/03/2018



Brad S. Wallenberg

ID #: 25916

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**John W Alexander**



Name

Certification No. **07-4296**

Expires on **02/21/18**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.

State of California Department of Public Health

Lead-Related Construction Certificate

Certificate Type	Expiration Date
Inspector/Assessor	02/18/2018
Project Monitor	02/18/2018



John W. Alexander ID #: 18887

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**



Name


Certification No. **92-0850**

Expires on **01/08/18**


This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



State of California Department of Public Health

Lead-Related Construction Certificate	Certificate Type	Expiration Date
	Inspector/Assessor ★	05/15/2018

Steffen P. Steiner ID # 477



December 8, 2021

Mr. Antonio Esposito  
Project Manager  
Solano County  
675 Texas Street, Suite 2500  
Fairfield, California 94533

RE: Limited Pre-Renovation Asbestos and Lead Roof Survey Report  
Fleet Building  
3255 N. Texas Street, Fairfield, CA  
Terracon Project #: R1217698

Dear Mr. Esposito:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead roof survey of the Fleet Building located at 325 N. Texas Street, Fairfield, California, on November 22, 2021. The survey was performed in response to a scheduled roof replacement project on the upper elevation of the building. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, and Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, performed the survey.

During the referenced survey event, one (1) of the six (6) suspect asbestos-containing materials (ACMs) sampled was found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Rolled roofing with white insulation	Upper roof main field	N/A	ND
02 / Roof curb	HVAC roof curbs	N/A	ND
03 / Penetration mastics, black/gray	Roof perimeter and penetrations	Cat. I	3% CH
04 / Vibration damper cloth	Roof HVAC units	N/A	ND

## FOR REFERENCE ONLY

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
05 / Duct sealant, gray	HVAC unit – northeast corner	N/A	ND
06 / Asphalt roof shingle and felt	Upper roof elevation – southeast & Lower roof elevation – northwest	N/A	ND

CH – Chrysotile, ND – None Detected, N/A – Not Applicable, Cat. II – Category II Non-Friable ACM

The asbestos samples were transported under chain of custody procedures to EMLab P&K (EMLab) in Irvine, California. The asbestos samples were analyzed by PLM techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. EMLab's analytical report is provided as an attachment to this letter report, along with the chain-of-custody forms.

Friable ACM is Regulated Asbestos-Containing Material (RACM) and must be removed prior to start of demolition or renovation activities. Category I Non-Friable materials can be reasonably expected to be damaged and made friable during normal demolition activities and should be removed prior to start of demolition. Category II Non-Friable materials are likely to be damaged and made friable during demolition or renovation activities and must be removed prior to start of demolition. All removal of ACM materials including materials non-friable materials left in the building must be conducted by a licensed and registered asbestos abatement contractor in accordance with Cal-OSHA regulation Title 8 CCR Section 1529 and local air quality regulations.

It should be noted that only the materials specifically mentioned within this report have been surveyed by Terracon. Any additional suspect materials identified during the course of construction related activities should be assumed to be asbestos-containing until sampling is conducted to determine asbestos content.

One (1) sample of paint was collected from the building and analyzed for lead at EMLab in Irvine, California by Flamed Atomic Absorption Spectrometry (NIOSH 7082 & EPA 7000B). Table II below provides a summary of the lead sample results.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb-01 / White paint on metal roof flashing	Roof flashing – upper roof at SW Corner / Metal	Good	<63

ppm – parts per million

The laboratory report and chain of custody documentation are provided as attachments to this letter report.

This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed herein. The analysis and conclusions in this report are based upon data obtained during the hazardous materials sampling activities. The professional services provided and judgments rendered on this project are consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.

Terracon appreciates this opportunity to provide our environmental consulting services to Solano County. If you have any questions or need additional information, please feel free to call me at 510-899-7005.

Respectfully,

**Terracon**

Steffen Steiner  
CAC, CDPH Lead I/A  
Office Manager



William Frieszell  
CIH, CAC, CDPH Lead I/A  
Senior Industrial Hygienist

Attachments   Laboratory Reports  
                         Chain-of-Custody Forms  
                         Sample Location Diagram  
                         Inspector Certifications



EMLab P&K



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795632

Approved by:

A handwritten signature in black ink, appearing to read "Danny Li", written over a faint circular stamp.

Approved Signatory  
Danny Li

Dates of Analysis:  
Asbestos PLM: 11-30-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200757-0

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

Total Samples Submitted: 16

Total Samples Analyzed: 16

Total Samples with Layer Asbestos Content &gt; 1%: 1

**Location: 1A, Rolled Roofing-Main Field w/ White Insulation; South Side-Center**

Lab ID-Version‡: 13388327-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1B, Rolled Roofing-Main Field w/ White Insulation; Center-West Side**

Lab ID-Version‡: 13388328-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1C, Rolled Roofing-Main Field w/ White Insulation; North Side-East Side**

Lab ID-Version‡: 13388329-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2A, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388330-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 2B, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388331-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2C, Roof Curb; Center-HVAC**

Lab ID-Version‡: 13388332-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 3A, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-Southeast**

Lab ID-Version‡: 13388333-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	3% Chrysotile
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3B, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-West**

Lab ID-Version‡: 13388334-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

**Location: 3C, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Southeast** Lab ID-Version‡: 13388335-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3D, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Central** Lab ID-Version‡: 13388336-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4A, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388337-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4B, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388338-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

**Eurofins EMLab P&K**17461 Derian Ave, Suite 100, Irvine, CA 92614  
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021

Date of Receipt: 11-24-2021

Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 5A, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388339-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 5B, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388340-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6A, Asphalt Roof Shingle and Felt; Upper Roof-SE**

Lab ID-Version‡: 13388341-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6B, Asphalt Roof Shingle and Felt; Lower Roof-NW**

Lab ID-Version‡: 13388342-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



# Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Grim  
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☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallin@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

## ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

1 of 2

Project Name/ Address/ Building No. Solano County Fleet Building - 3255 N. Texas St. Fairfield

Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM#	Material Description	Sample ID	Sample Location & Material Location	Quantity:
01	Roller Roofing - Main Field, w/ white insulation	1A	South Side - Center	
		1B	Center - West Side	
		1C	North Side - East Side	
02	Roof Curb	2A	South Side - HVAC	
		2B	" " "	
		2C	Center - HVAC	
03	Perimeter / Penetration Mastic, Black / Gray	3A	Roof Perimeter - Southeast	
		3B	" " - West	
		3C	" Penetration - Southeast	
		3D	Roof Penetration - Central	
04	Vibration Damper Cloth	4A	NE HVAC Unit	
		4B	" " "	

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: 11/24/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

002795632

Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT MANAGER (PM)\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Pilgrim  
kmpilgrim@terracon.com

☐ PM - M. Benefield  
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☐ PM - T. Kattichee  
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☐ PM - W. Frieszell  
wmfrieszell@terracon.com

☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallen@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

2 of 2

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield

Project# R1217698 Sampled By: Steiner/Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>05</u>	Material Description: <u>Duct Sealant, Gray</u>
Sample ID	Sample Location & Material Location
<u>SA</u>	<u>NE HVAC Unit</u>
<u>SB</u>	<u>" "</u>
HM# <u>06</u>	Material Description: <u>Asphalt Roof Shingle &amp; Felt</u>
Sample ID	Sample Location & Material Location
<u>6A</u>	<u>Upper Roof - SE</u>
<u>6B</u>	<u>Lower Roof - NW</u>
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795635

Approved by:



Laboratory Manager  
Danny Li

Dates of Analysis:

Lead - Flame AA: 11-30-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)  
AIHA-LAP, LLC accredited service, Lab ID #178697

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.



Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY**

Location:	Pb-01: White, Metal, Roof Flashing; Upper Roof-SW Corner
Comments (see below)	None
Lab ID-Version‡:	13388238-1
Analysis Date:	11/30/2021
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	63 ppm
Sample size	0.1578 grams
§ Total Lead Result	< 63 ppm

**Comments:**

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

\*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



002795635

Terracon

***E-MAIL REPORT TO: PROJECT MANAGER (PM)***			LEAD PAINT SAMPLE DATA SHEET	
<input type="checkbox"/> denise.wallen@terracon.com Engineering Assistant	<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis <input checked="" type="checkbox"/> Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com	<input type="checkbox"/> PM - K. Schroeter kschroeter@terracon.com		PAGE <u>1</u> OF <u>1</u>	
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee tkattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield  
 Project# P1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21  
 Sample(s) sent to: ☐ MAL ☒ EMSL ☐ Aerobiology ☐ Quantem ☐ Other \_\_\_\_\_  
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: <u>White</u> Substrate: <u>Metal</u> Component: <u>Roof Flashing</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>Upper Roof - SW Corner</u>	I
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By:

Steve Steiner

Signature:

Date/Time:

11/22/21

Received By:

Signature:

Date/ Time:

11/24 @ 10:30

Received By:

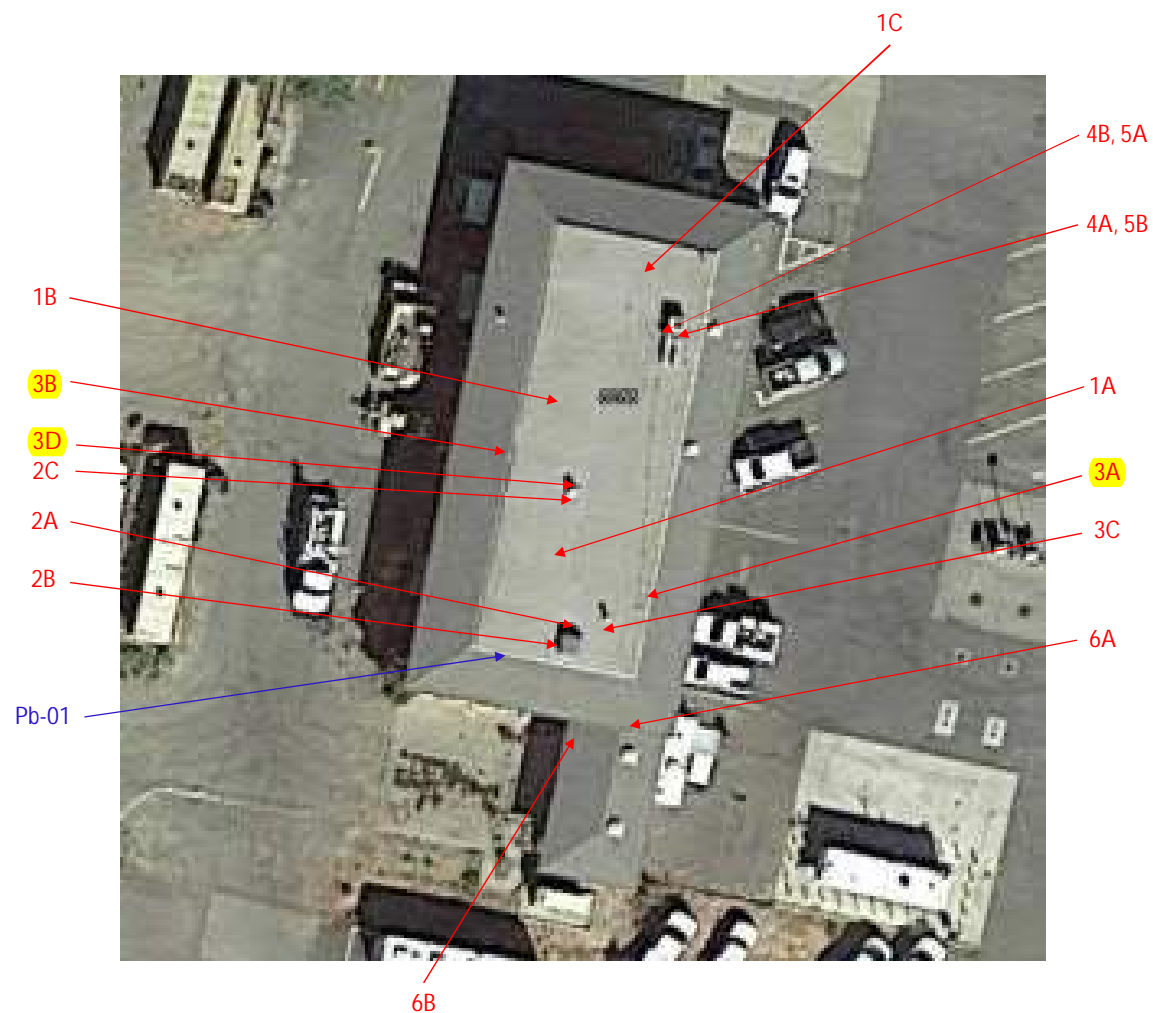
Signature:

Date/Time:

Fleet Building  
Solano County

Pre-Renovation  
Roof Survey

3255 N. Texas Street  
Fairfield, California



↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2021	SPS
<b>Project Number</b>	<b>Checked By</b>
R1217698	WMF
<b>Sheet Name</b>	
Roof - Sample Location Diagram	
<b>Sheet Number</b>	
Figure 1	

## DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Certification &amp; Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> [acru@dir.ca.gov](mailto:acru@dir.ca.gov)

812034464T

321

October 29, 2020

Michael H Reed  
2647 lone Avenue  
Castro Valley CA 94546

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell  
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 06/2020)





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Micheal Reed**

**CERTIFICATE TYPE:**

Lead Sampling Technician

**NUMBER:**

LRC-00000224

**EXPIRATION DATE:**

5/21/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**

Name



Certification No. **92-0850**

Expires on **01/08/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



**Steffen Steiner**

CERTIFICATE TYPE:

Lead Inspector/Assessor

NUMBER:

LRC-00005586

EXPIRATION DATE:

5/15/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

December 8, 2021

Mr. Antonio Esposito  
Project Manager  
Solano County  
675 Texas Street, Suite 2500  
Fairfield, California 94533

RE: Limited Pre-Renovation Asbestos and Lead Roof Survey Report  
Fleet Building  
3255 N. Texas Street, Fairfield, CA  
Terracon Project #: R1217698

Dear Mr. Esposito:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead roof survey of the Fleet Building located at 325 N. Texas Street, Fairfield, California, on November 22, 2021. The survey was performed in response to a scheduled roof replacement project on the upper elevation of the building. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, and Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, performed the survey.

During the referenced survey event, one (1) of the six (6) suspect asbestos-containing materials (ACMs) sampled was found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Rolled roofing with white insulation	Upper roof main field	N/A	ND
02 / Roof curb	HVAC roof curbs	N/A	ND
03 / Penetration mastics, black/gray	Roof perimeter and penetrations	Cat. I	3% CH
04 / Vibration damper cloth	Roof HVAC units	N/A	ND

## FOR REFERENCE ONLY

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
05 / Duct sealant, gray	HVAC unit – northeast corner	N/A	ND
06 / Asphalt roof shingle and felt	Upper roof elevation – southeast & Lower roof elevation – northwest	N/A	ND

CH – Chrysotile, ND – None Detected, N/A – Not Applicable, Cat. II – Category II Non-Friable ACM

The asbestos samples were transported under chain of custody procedures to EMLab P&K (EMLab) in Irvine, California. The asbestos samples were analyzed by PLM techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. EMLab's analytical report is provided as an attachment to this letter report, along with the chain-of-custody forms.

Friable ACM is Regulated Asbestos-Containing Material (RACM) and must be removed prior to start of demolition or renovation activities. Category I Non-Friable materials can be reasonably expected to be damaged and made friable during normal demolition activities and should be removed prior to start of demolition. Category II Non-Friable materials are likely to be damaged and made friable during demolition or renovation activities and must be removed prior to start of demolition. All removal of ACM materials including materials non-friable materials left in the building must be conducted by a licensed and registered asbestos abatement contractor in accordance with Cal-OSHA regulation Title 8 CCR Section 1529 and local air quality regulations.

It should be noted that only the materials specifically mentioned within this report have been surveyed by Terracon. Any additional suspect materials identified during the course of construction related activities should be assumed to be asbestos-containing until sampling is conducted to determine asbestos content.

One (1) sample of paint was collected from the building and analyzed for lead at EMLab in Irvine, California by Flamed Atomic Absorption Spectrometry (NIOSH 7082 & EPA 7000B). Table II below provides a summary of the lead sample results.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb-01 / White paint on metal roof flashing	Roof flashing – upper roof at SW Corner / Metal	Good	<63

ppm – parts per million

The laboratory report and chain of custody documentation are provided as attachments to this letter report.

This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed herein. The analysis and conclusions in this report are based upon data obtained during the hazardous materials sampling activities. The professional services provided and judgments rendered on this project are consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.

Terracon appreciates this opportunity to provide our environmental consulting services to Solano County. If you have any questions or need additional information, please feel free to call me at 510-899-7005.

Respectfully,

**Terracon**

Steffen Steiner  
CAC, CDPH Lead I/A  
Office Manager



William Frieszell  
CIH, CAC, CDPH Lead I/A  
Senior Industrial Hygienist

Attachments   Laboratory Reports  
                         Chain-of-Custody Forms  
                         Sample Location Diagram  
                         Inspector Certifications



EMLab P&K



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795632

Approved by:

A handwritten signature in black ink, appearing to read "Danny Li", written over a faint circular stamp.

Approved Signatory  
Danny Li

Dates of Analysis:  
Asbestos PLM: 11-30-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200757-0

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

Total Samples Submitted: 16

Total Samples Analyzed: 16

Total Samples with Layer Asbestos Content &gt; 1%: 1

**Location: 1A, Rolled Roofing-Main Field w/ White Insulation; South Side-Center**

Lab ID-Version‡: 13388327-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1B, Rolled Roofing-Main Field w/ White Insulation; Center-West Side**

Lab ID-Version‡: 13388328-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1C, Rolled Roofing-Main Field w/ White Insulation; North Side-East Side**

Lab ID-Version‡: 13388329-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2A, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388330-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 2B, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388331-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2C, Roof Curb; Center-HVAC**

Lab ID-Version‡: 13388332-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 3A, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-Southeast**

Lab ID-Version‡: 13388333-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	3% Chrysotile
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3B, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-West**

Lab ID-Version‡: 13388334-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

**Location: 3C, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Southeast** Lab ID-Version‡: 13388335-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3D, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Central** Lab ID-Version‡: 13388336-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4A, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388337-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4B, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388338-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

**Eurofins EMLab P&K**17461 Derian Ave, Suite 100, Irvine, CA 92614  
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021

Date of Receipt: 11-24-2021

Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 5A, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388339-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 5B, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388340-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6A, Asphalt Roof Shingle and Felt; Upper Roof-SE**

Lab ID-Version‡: 13388341-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6B, Asphalt Roof Shingle and Felt; Lower Roof-NW**

Lab ID-Version‡: 13388342-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



# Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Grim  
kmpilgrim@terracon.com

☐ PM - M. Benefield  
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☐ PM - T. Kattchee  
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☐ PM - W. Frieszell  
wmfrieszell@terracon.com

☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallin@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

## ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

1 of 2

Project Name/ Address/ Building No. Solano County Fleet Building - 3255 N. Texas St. Fairfield

Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# 01	Material Description: <u>Roller Roofing - Main Field, w/ white insulation</u>
Sample ID	Sample Location & Material Location <span style="float: right;">Quantity:</span>
1A	South Side - Center
1B	Center - West Side
1C	North Side - East Side
HM# 02	Material Description: <u>Roof Curb</u>
Sample ID	Sample Location & Material Location <span style="float: right;">Quantity:</span>
2A	South Side - HVAC
2B	" " "
2C	Center - HVAC
HM# 03	Material Description: <u>Perimeter / Penetration Mastic, Black / Gray</u>
Sample ID	Sample Location & Material Location <span style="float: right;">Quantity:</span>
3A	Roof Perimeter - Southeast
3B	" " - West
3C	" Penetration - Southeast
HM#	Material Description:
Sample ID	Sample Location & Material Location <span style="float: right;">Quantity:</span>
3D	Roof Penetration - Central
HM# 04	Material Description: <u>Vibration Damper Cloth</u>
Sample ID	Sample Location & Material Location <span style="float: right;">Quantity:</span>
4A	NE HVAC Unit
4B	" " "

Relinquished By: <u>Steff Steiner</u>	Signature: <u>[Signature]</u>	Date/Time: <u>11/22/21</u>
Received By: _____	Signature: _____	Date/Time: _____
Relinquished By: _____	Signature: _____	Date/Time: <u>11/24/2021</u>
Received By: _____	Signature: _____	Date/Time: _____

002795632

Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT MANAGER (PM)\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Pilgrim  
kmpilgrim@terracon.com

☐ PM - M. Benefield  
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☐ PM - D. Block  
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☐ denise.wallen@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

2 of 2

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield

Project# R1217698 Sampled By: Steiner/Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>05</u>	Material Description: <u>Duct Sealant, Gray</u>
Sample ID	Sample Location & Material Location
<u>SA</u>	<u>NE HVAC Unit</u>
<u>SB</u>	<u>" "</u>
HM# <u>06</u>	Material Description: <u>Asphalt Roof Shingle &amp; Felt</u>
Sample ID	Sample Location & Material Location
<u>6A</u>	<u>Upper Roof - SE</u>
<u>6B</u>	<u>Lower Roof - NW</u>
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location

Relinquished By: <u>Steff Steiner</u>	Signature: <u>[Signature]</u>	Date/Time: <u>11/22/21</u>
Received By: _____	Signature: _____	Date/Time: _____
Relinquished By: _____	Signature: _____	Date/Time: _____
Received By: _____	Signature: _____	Date/Time: _____



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795635

Approved by:



Laboratory Manager  
Danny Li

Dates of Analysis:

Lead - Flame AA: 11-30-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)  
AIHA-LAP, LLC accredited service, Lab ID #178697

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.



Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY**

Location:	Pb-01: White, Metal, Roof Flashing; Upper Roof-SW Corner
Comments (see below)	None
Lab ID-Version‡:	13388238-1
Analysis Date:	11/30/2021
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	63 ppm
Sample size	0.1578 grams
§ Total Lead Result	< 63 ppm

**Comments:**

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

\*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



002795635

Terracon

***E-MAIL REPORT TO: PROJECT MANAGER (PM)***			LEAD PAINT SAMPLE DATA SHEET	
<input type="checkbox"/> denise.wallen@terracon.com Engineering Assistant	<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis <input checked="" type="checkbox"/> Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com	<input type="checkbox"/> PM - K. Schroeter kschroeter@terracon.com		PAGE <u>1</u> OF <u>1</u>	
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee tekattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield  
 Project# P1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21  
 Sample(s) sent to: ☐ MAL ☒ EMSL ☐ Aerobiology ☐ Quantem ☐ Other \_\_\_\_\_  
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: <u>White</u> Substrate: <u>Metal</u> Component: <u>Roof Flashing</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>Upper Roof - SW Corner</u>	I
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By:

Steve Steiner

Signature:

Date/Time:

11/22/21

Received By:

Signature:

Date/Time:

11/24 @ 10:30

Received By:

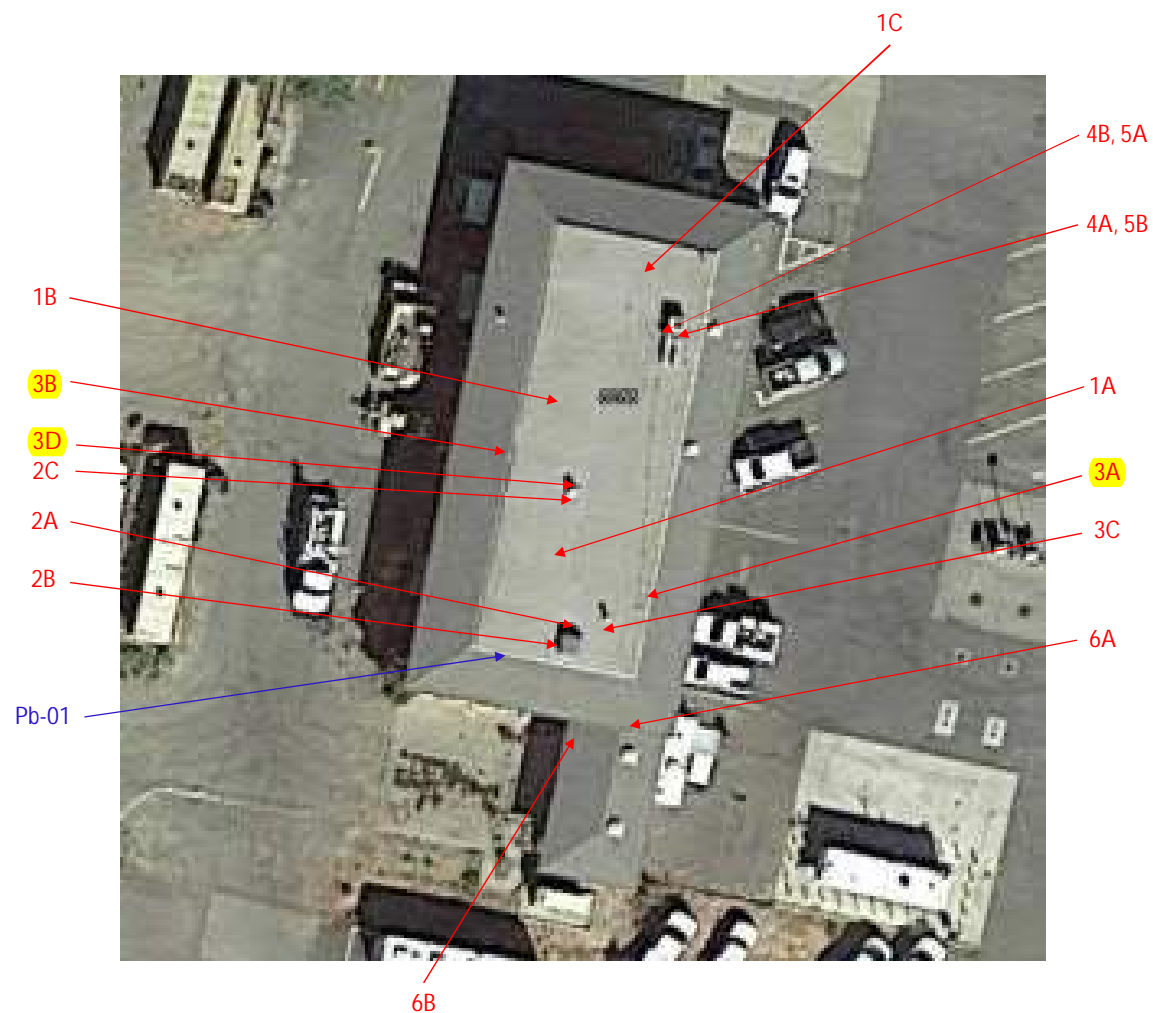
Signature:

Date/Time:

Fleet Building  
Solano County

Pre-Renovation  
Roof Survey

3255 N. Texas Street  
Fairfield, California



↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2021	SPS
<b>Project Number</b>	<b>Checked By</b>
R1217698	WMF
<b>Sheet Name</b>	
Roof - Sample Location Diagram	
<b>Sheet Number</b>	
Figure 1	

## DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Certification &amp; Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> [acru@dir.ca.gov](mailto:acru@dir.ca.gov)

812034464T

321

October 29, 2020

Michael H Reed  
2647 lone Avenue  
Castro Valley CA 94546

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell  
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 06/2020)





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Micheal Reed**

**CERTIFICATE TYPE:**

Lead Sampling Technician

**NUMBER:**

LRC-00000224

**EXPIRATION DATE:**

5/21/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**

Name



Certification No. **92-0850**

Expires on **01/08/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Steffen Steiner**

**CERTIFICATE TYPE:**

Lead Inspector/Assessor

**NUMBER:**

LRC-00005586

**EXPIRATION DATE:**

5/15/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

December 8, 2021

Mr. Antonio Esposito  
Project Manager  
Solano County  
675 Texas Street, Suite 2500  
Fairfield, California 94533

RE: Limited Pre-Renovation Asbestos and Lead Roof Survey Report  
Fleet Building  
3255 N. Texas Street, Fairfield, CA  
Terracon Project #: R1217698

Dear Mr. Esposito:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead roof survey of the Fleet Building located at 325 N. Texas Street, Fairfield, California, on November 22, 2021. The survey was performed in response to a scheduled roof replacement project on the upper elevation of the building. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, and Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, performed the survey.

During the referenced survey event, one (1) of the six (6) suspect asbestos-containing materials (ACMs) sampled was found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Rolled roofing with white insulation	Upper roof main field	N/A	ND
02 / Roof curb	HVAC roof curbs	N/A	ND
03 / Penetration mastics, black/gray	Roof perimeter and penetrations	Cat. I	3% CH
04 / Vibration damper cloth	Roof HVAC units	N/A	ND

## FOR REFERENCE ONLY

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
05 / Duct sealant, gray	HVAC unit – northeast corner	N/A	ND
06 / Asphalt roof shingle and felt	Upper roof elevation – southeast & Lower roof elevation – northwest	N/A	ND

CH – Chrysotile, ND – None Detected, N/A – Not Applicable, Cat. II – Category II Non-Friable ACM

The asbestos samples were transported under chain of custody procedures to EMLab P&K (EMLab) in Irvine, California. The asbestos samples were analyzed by PLM techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. EMLab's analytical report is provided as an attachment to this letter report, along with the chain-of-custody forms.

Friable ACM is Regulated Asbestos-Containing Material (RACM) and must be removed prior to start of demolition or renovation activities. Category I Non-Friable materials can be reasonably expected to be damaged and made friable during normal demolition activities and should be removed prior to start of demolition. Category II Non-Friable materials are likely to be damaged and made friable during demolition or renovation activities and must be removed prior to start of demolition. All removal of ACM materials including materials non-friable materials left in the building must be conducted by a licensed and registered asbestos abatement contractor in accordance with Cal-OSHA regulation Title 8 CCR Section 1529 and local air quality regulations.

It should be noted that only the materials specifically mentioned within this report have been surveyed by Terracon. Any additional suspect materials identified during the course of construction related activities should be assumed to be asbestos-containing until sampling is conducted to determine asbestos content.

One (1) sample of paint was collected from the building and analyzed for lead at EMLab in Irvine, California by Flamed Atomic Absorption Spectrometry (NIOSH 7082 & EPA 7000B). Table II below provides a summary of the lead sample results.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb-01 / White paint on metal roof flashing	Roof flashing – upper roof at SW Corner / Metal	Good	<63

ppm – parts per million

The laboratory report and chain of custody documentation are provided as attachments to this letter report.

This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed herein. The analysis and conclusions in this report are based upon data obtained during the hazardous materials sampling activities. The professional services provided and judgments rendered on this project are consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.

Terracon appreciates this opportunity to provide our environmental consulting services to Solano County. If you have any questions or need additional information, please feel free to call me at 510-899-7005.

Respectfully,

**Terracon**

Steffen Steiner  
CAC, CDPH Lead I/A  
Office Manager



William Frieszell  
CIH, CAC, CDPH Lead I/A  
Senior Industrial Hygienist

Attachments   Laboratory Reports  
                         Chain-of-Custody Forms  
                         Sample Location Diagram  
                         Inspector Certifications



EMLab P&K



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795632

Approved by:

A handwritten signature in black ink, appearing to read "Danny Li", written over a faint circular stamp.

Approved Signatory  
Danny Li

Dates of Analysis:  
Asbestos PLM: 11-30-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200757-0

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

Total Samples Submitted: 16

Total Samples Analyzed: 16

Total Samples with Layer Asbestos Content &gt; 1%: 1

**Location: 1A, Rolled Roofing-Main Field w/ White Insulation; South Side-Center**

Lab ID-Version‡: 13388327-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1B, Rolled Roofing-Main Field w/ White Insulation; Center-West Side**

Lab ID-Version‡: 13388328-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1C, Rolled Roofing-Main Field w/ White Insulation; North Side-East Side**

Lab ID-Version‡: 13388329-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2A, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388330-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 2B, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388331-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2C, Roof Curb; Center-HVAC**

Lab ID-Version‡: 13388332-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 3A, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-Southeast**

Lab ID-Version‡: 13388333-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	3% Chrysotile
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3B, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-West**

Lab ID-Version‡: 13388334-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

**Location: 3C, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Southeast** Lab ID-Version‡: 13388335-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3D, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Central** Lab ID-Version‡: 13388336-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4A, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388337-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4B, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388338-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

**Eurofins EMLab P&K**17461 Derian Ave, Suite 100, Irvine, CA 92614  
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021

Date of Receipt: 11-24-2021

Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 5A, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388339-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 5B, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388340-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6A, Asphalt Roof Shingle and Felt; Upper Roof-SE**

Lab ID-Version‡: 13388341-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6B, Asphalt Roof Shingle and Felt; Lower Roof-NW**

Lab ID-Version‡: 13388342-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



# Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Grim  
kmpilgrim@terracon.com

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David.block@terracon.com

☐ denise.wallin@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

## ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

1 of 2

Project Name/ Address/ Building No. Solano County Fleet Building - 3255 N. Texas St. Fairfield

Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM#	Material Description	Sample ID	Sample Location & Material Location	Quantity:
01	Roller Roofing - Main Field, w/ white insulation	1A	South Side - Center	
		1B	Center - West Side	
		1C	North Side - East Side	
02	Roof Curb	2A	South Side - HVAC	
		2B	" " "	
		2C	Center - HVAC	
03	Perimeter / Penetration Mastic, Black / Gray	3A	Roof Perimeter - Southeast	
		3B	" " - West	
		3C	" Penetration - Southeast	
		3D	Roof Penetration - Central	
04	Vibration Damper Cloth	4A	NE HVAC Unit	
		4B	" " "	

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: 11/24/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

002795632

Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT MANAGER (PM)\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Pilgrim  
kmpilgrim@terracon.com

☐ PM - M. Benefield  
msbenefield@terracon.com

☐ PM - T. Kattichee  
takattichee@terracon.com

☐ PM - W. Frieszell  
wmfrieszell@terracon.com

☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallen@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

2 of 2

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield

Project# R1217698 Sampled By: Steiner/Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>05</u>	Material Description: <u>Duct Sealant, Gray</u>
Sample ID	Sample Location & Material Location
<u>SA</u>	<u>NE HVAC Unit</u>
<u>SB</u>	<u>" "</u>
HM# <u>06</u>	Material Description: <u>Asphalt Roof Shingle &amp; Felt</u>
Sample ID	Sample Location & Material Location
<u>6A</u>	<u>Upper Roof - SE</u>
<u>6B</u>	<u>Lower Roof - NW</u>
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795635

Approved by:



Laboratory Manager  
Danny Li

Dates of Analysis:

Lead - Flame AA: 11-30-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)  
AIHA-LAP, LLC accredited service, Lab ID #178697

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY**

Location:	Pb-01: White, Metal, Roof Flashing; Upper Roof-SW Corner
Comments (see below)	None
Lab ID-Version‡:	13388238-1
Analysis Date:	11/30/2021
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	63 ppm
Sample size	0.1578 grams
§ Total Lead Result	< 63 ppm

**Comments:**

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

\*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".





002795635

Terracon

***E-MAIL REPORT TO: PROJECT MANAGER (PM)***			LEAD PAINT SAMPLE DATA SHEET	
<input type="checkbox"/> denise.wallen@terracon.com Engineering Assistant	<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis <input checked="" type="checkbox"/> Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com	<input type="checkbox"/> PM - K. Schroeter kschroeter@terracon.com		PAGE <u>1</u> OF <u>1</u>	
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee tekattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield  
 Project# P1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21  
 Sample(s) sent to: ☐ MAL ☒ EMSL ☐ Aerobiology ☐ Quantem Other \_\_\_\_\_  
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: <u>White</u> Substrate: <u>Metal</u> Component: <u>Roof Flashing</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>Upper Roof - SW Corner</u>	I
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By:

Steve Steiner

Signature:

Date/Time:

11/22/21

Received By:

Signature:

Date/Time:

11/24 @ 10:30

Received By:

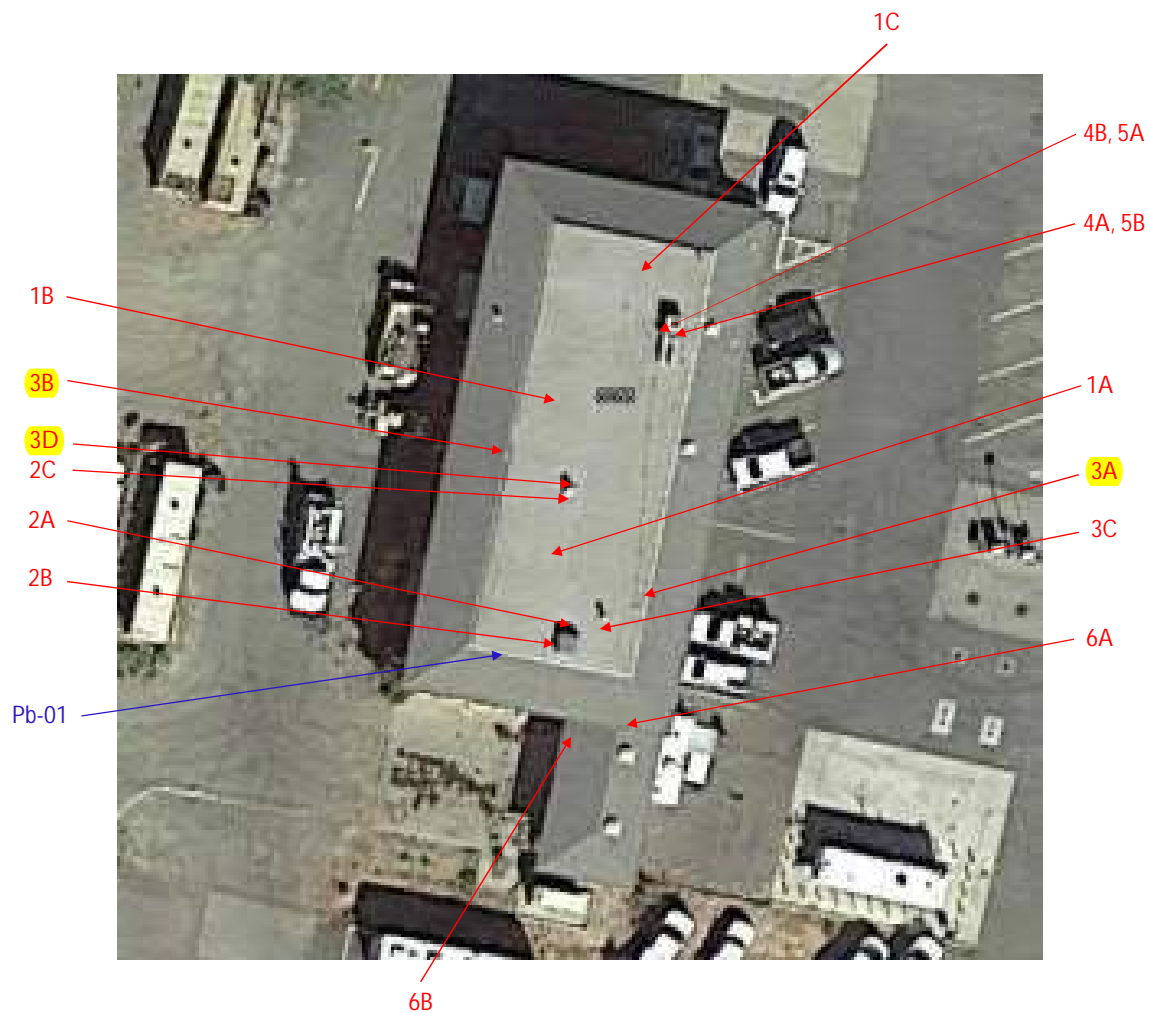
Signature:

Date/Time:

Fleet Building  
Solano County

Pre-Renovation  
Roof Survey

3255 N. Texas Street  
Fairfield, California



↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2021	SPS
<b>Project Number</b>	<b>Checked By</b>
R1217698	WMF
<b>Sheet Name</b>	
Roof - Sample Location Diagram	
<b>Sheet Number</b>	
Figure 1	

## DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Certification &amp; Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> [acru@dir.ca.gov](mailto:acru@dir.ca.gov)

812034464T

321

October 29, 2020

Michael H Reed  
2647 lone Avenue  
Castro Valley CA 94546

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell  
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 06/2020)





STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Micheal Reed**

**CERTIFICATE TYPE:**

Lead Sampling Technician

**NUMBER:**

LRC-00000224

**EXPIRATION DATE:**

5/21/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**

Name



Certification No. **92-0850**

Expires on **01/08/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Steffen Steiner**

**CERTIFICATE TYPE:**

Lead Inspector/Assessor

**NUMBER:**

LRC-00005586

**EXPIRATION DATE:**

5/15/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

December 8, 2021

Mr. Antonio Esposito  
Project Manager  
Solano County  
675 Texas Street, Suite 2500  
Fairfield, California 94533

RE: Limited Pre-Renovation Asbestos and Lead Roof Survey Report  
Fleet Building  
3255 N. Texas Street, Fairfield, CA  
Terracon Project #: R1217698

Dear Mr. Esposito:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead roof survey of the Fleet Building located at 325 N. Texas Street, Fairfield, California, on November 22, 2021. The survey was performed in response to a scheduled roof replacement project on the upper elevation of the building. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, and Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, performed the survey.

During the referenced survey event, one (1) of the six (6) suspect asbestos-containing materials (ACMs) sampled was found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Rolled roofing with white insulation	Upper roof main field	N/A	ND
02 / Roof curb	HVAC roof curbs	N/A	ND
03 / Penetration mastics, black/gray	Roof perimeter and penetrations	Cat. I	3% CH
04 / Vibration damper cloth	Roof HVAC units	N/A	ND



## FOR REFERENCE ONLY

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
05 / Duct sealant, gray	HVAC unit – northeast corner	N/A	ND
06 / Asphalt roof shingle and felt	Upper roof elevation – southeast & Lower roof elevation – northwest	N/A	ND

CH – Chrysotile, ND – None Detected, N/A – Not Applicable, Cat. II – Category II Non-Friable ACM

The asbestos samples were transported under chain of custody procedures to EMLab P&K (EMLab) in Irvine, California. The asbestos samples were analyzed by PLM techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. EMLab's analytical report is provided as an attachment to this letter report, along with the chain-of-custody forms.

Friable ACM is Regulated Asbestos-Containing Material (RACM) and must be removed prior to start of demolition or renovation activities. Category I Non-Friable materials can be reasonably expected to be damaged and made friable during normal demolition activities and should be removed prior to start of demolition. Category II Non-Friable materials are likely to be damaged and made friable during demolition or renovation activities and must be removed prior to start of demolition. All removal of ACM materials including materials non-friable materials left in the building must be conducted by a licensed and registered asbestos abatement contractor in accordance with Cal-OSHA regulation Title 8 CCR Section 1529 and local air quality regulations.

It should be noted that only the materials specifically mentioned within this report have been surveyed by Terracon. Any additional suspect materials identified during the course of construction related activities should be assumed to be asbestos-containing until sampling is conducted to determine asbestos content.

One (1) sample of paint was collected from the building and analyzed for lead at EMLab in Irvine, California by Flamed Atomic Absorption Spectrometry (NIOSH 7082 & EPA 7000B). Table II below provides a summary of the lead sample results.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb-01 / White paint on metal roof flashing	Roof flashing – upper roof at SW Corner / Metal	Good	<63

ppm – parts per million

The laboratory report and chain of custody documentation are provided as attachments to this letter report.

This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed herein. The analysis and conclusions in this report are based upon data obtained during the hazardous materials sampling activities. The professional services provided and judgments rendered on this project are consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.

Terracon appreciates this opportunity to provide our environmental consulting services to Solano County. If you have any questions or need additional information, please feel free to call me at 510-899-7005.

Respectfully,

**Terracon**

Steffen Steiner  
CAC, CDPH Lead I/A  
Office Manager



William Frieszell  
CIH, CAC, CDPH Lead I/A  
Senior Industrial Hygienist

Attachments   Laboratory Reports  
                         Chain-of-Custody Forms  
                         Sample Location Diagram  
                         Inspector Certifications



EMLab P&K



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795632

Approved by:

A handwritten signature in black ink, appearing to read "Danny Li", written over a faint circular stamp.

Approved Signatory  
Danny Li

Dates of Analysis:  
Asbestos PLM: 11-30-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200757-0

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

Total Samples Submitted: 16

Total Samples Analyzed: 16

Total Samples with Layer Asbestos Content &gt; 1%: 1

**Location: 1A, Rolled Roofing-Main Field w/ White Insulation; South Side-Center**

Lab ID-Version‡: 13388327-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1B, Rolled Roofing-Main Field w/ White Insulation; Center-West Side**

Lab ID-Version‡: 13388328-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1C, Rolled Roofing-Main Field w/ White Insulation; North Side-East Side**

Lab ID-Version‡: 13388329-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2A, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388330-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 2B, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388331-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2C, Roof Curb; Center-HVAC**

Lab ID-Version‡: 13388332-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 3A, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-Southeast**

Lab ID-Version‡: 13388333-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	3% Chrysotile
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3B, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-West**

Lab ID-Version‡: 13388334-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

**Location: 3C, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Southeast** Lab ID-Version‡: 13388335-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3D, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Central** Lab ID-Version‡: 13388336-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4A, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388337-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4B, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version‡: 13388338-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

**Eurofins EMLab P&K**17461 Derian Ave, Suite 100, Irvine, CA 92614  
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021

Date of Receipt: 11-24-2021

Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 5A, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388339-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 5B, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388340-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6A, Asphalt Roof Shingle and Felt; Upper Roof-SE**

Lab ID-Version‡: 13388341-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6B, Asphalt Roof Shingle and Felt; Lower Roof-NW**

Lab ID-Version‡: 13388342-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".





# Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Grim  
kmpilgrim@terracon.com

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☐ PM - T. Kattchee  
takattchee@terracon.com

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☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallin@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

## ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

1 of 2

Project Name/ Address/ Building No. Solano County Fleet Building - 3255 N. Texas St. Fairfield

Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM#	Material Description	Sample ID	Sample Location & Material Location	Quantity:
01	Roller Roofing - Main Field, w/ white insulation	1A	South Side - Center	
		1B	Center - West Side	
		1C	North Side - East Side	
02	Roof Curb	2A	South Side - HVAC	
		2B	" " "	
		2C	Center - HVAC	
03	Perimeter / Penetration Mastic, Black / Gray	3A	Roof Perimeter - Southeast	
		3B	" " - West	
		3C	" Penetration - Southeast	
		3D	Roof Penetration - Central	
04	Vibration Damper Cloth	4A	NE HVAC Unit	
		4B	" " "	

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: 11/24/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_

002795632

Terracon

\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT MANAGER (PM)\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Pilgrim  
kmpilgrim@terracon.com

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wmfrieszell@terracon.com

☐ PM - D. Block  
David.block@terracon.com

☐ denise.wallen@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

2 of 2

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield

Project# R1217698 Sampled By: Steiner/Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>05</u>	Material Description: <u>Duct Sealant, Gray</u>
Sample ID	Sample Location & Material Location
<u>SA</u>	<u>NE HVAC Unit</u>
<u>SB</u>	<u>" "</u>
HM# <u>06</u>	Material Description: <u>Asphalt Roof Shingle &amp; Felt</u>
Sample ID	Sample Location & Material Location
<u>6A</u>	<u>Upper Roof - SE</u>
<u>6B</u>	<u>Lower Roof - NW</u>
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location

Relinquished By: Steff Steiner Signature: [Signature] Date/Time: 11/22/21  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Relinquished By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received By: \_\_\_\_\_ Signature: \_\_\_\_\_ Date/Time: \_\_\_\_\_



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795635

Approved by:



Laboratory Manager  
Danny Li

Dates of Analysis:  
Lead - Flame AA: 11-30-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)  
AIHA-LAP, LLC accredited service, Lab ID #178697

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY**

Location:	Pb-01: White, Metal, Roof Flashing; Upper Roof-SW Corner
Comments (see below)	None
Lab ID-Version‡:	13388238-1
Analysis Date:	11/30/2021
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	63 ppm
Sample size	0.1578 grams
§ Total Lead Result	< 63 ppm

**Comments:**

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

\*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



002795635

Terracon

***E-MAIL REPORT TO: PROJECT MANAGER (PM)***			LEAD PAINT SAMPLE DATA SHEET	
<input type="checkbox"/> denise.wallen@terracon.com Engineering Assistant	<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis <input checked="" type="checkbox"/> Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com		<input type="checkbox"/> PM - K. Schroeter kschroeter@terracon.com		
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee tekattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield  
 Project# P1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21  
 Sample(s) sent to: ☐ MAL ☒ EMSL ☐ Aerobiology ☐ Quantem Other \_\_\_\_\_  
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: <u>White</u> Substrate: <u>Metal</u> Component: <u>Roof Flashing</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>Upper Roof - SW Corner</u>	I
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By:

Steve Steiner

Signature:

Date/Time:

11/22/21

Received By:

Signature:

Date/Time:

11/24 @ 10:30

Received By:

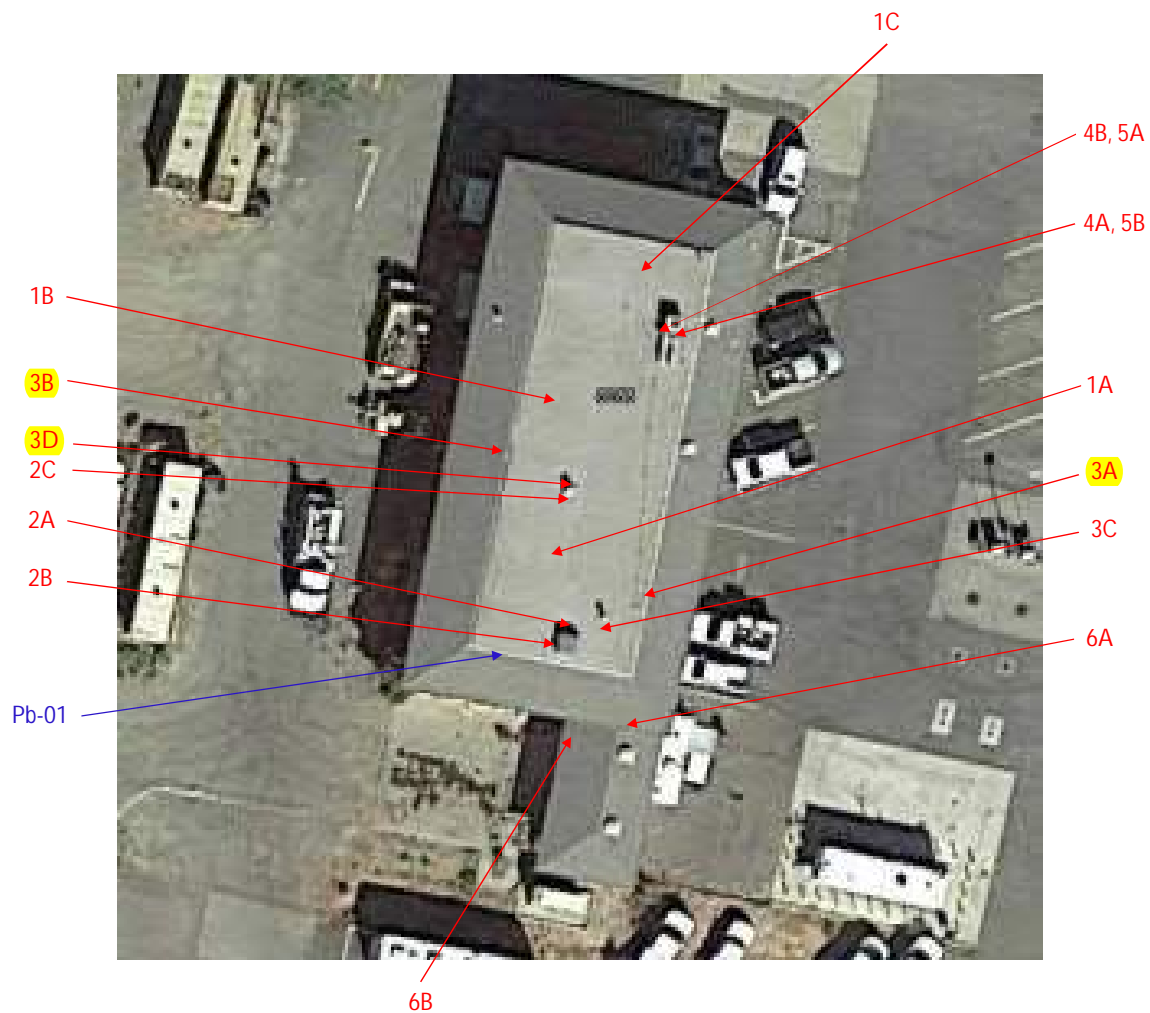
Signature:

Date/Time:

Fleet Building  
Solano County

Pre-Renovation  
Roof Survey

3255 N. Texas Street  
Fairfield, California



↑  
**N**  
Not to Scale

<b>Date</b>	<b>Drafted By</b>
November 2021	SPS
<b>Project Number</b>	<b>Checked By</b>
R1217698	WMF
<b>Sheet Name</b>	
Roof - Sample Location Diagram	
<b>Sheet Number</b>	
Figure 1	

## DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Certification &amp; Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> [acru@dir.ca.gov](mailto:acru@dir.ca.gov)

812034464T

321

October 29, 2020

Michael H Reed  
2647 lone Avenue  
Castro Valley CA 94546

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell  
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 06/2020)







STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Micheal Reed**

**CERTIFICATE TYPE:**

Lead Sampling Technician

**NUMBER:**

LRC-00000224

**EXPIRATION DATE:**

5/21/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**

Name



Certification No. **92-0850**

Expires on **01/08/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



**Steffen Steiner**

CERTIFICATE TYPE:

Lead Inspector/Assessor

NUMBER:

LRC-00005586

EXPIRATION DATE:

5/15/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.

December 8, 2021

Mr. Antonio Esposito  
Project Manager  
Solano County  
675 Texas Street, Suite 2500  
Fairfield, California 94533

RE: Limited Pre-Renovation Asbestos and Lead Roof Survey Report  
Fleet Building  
3255 N. Texas Street, Fairfield, CA  
Terracon Project #: R1217698

Dear Mr. Esposito:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead roof survey of the Fleet Building located at 325 N. Texas Street, Fairfield, California, on November 22, 2021. The survey was performed in response to a scheduled roof replacement project on the upper elevation of the building. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, and Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, performed the survey.

During the referenced survey event, one (1) of the six (6) suspect asbestos-containing materials (ACMs) sampled was found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Rolled roofing with white insulation	Upper roof main field	N/A	ND
02 / Roof curb	HVAC roof curbs	N/A	ND
03 / Penetration mastics, black/gray	Roof perimeter and penetrations	Cat. I	3% CH
04 / Vibration damper cloth	Roof HVAC units	N/A	ND

# FOR REFERENCE ONLY

<b>TABLE I – ASBESTOS SAMPLE RESULTS</b>			
<b>HM # / Material Description</b>	<b>Sample Locations</b>	<b>NESHAP Category</b>	<b>Results</b>
05 / Duct sealant, gray	HVAC unit – northeast corner	N/A	ND
06 / Asphalt roof shingle and felt	Upper roof elevation – southeast & Lower roof elevation – northwest	N/A	ND

CH – Chrysotile, ND – None Detected, N/A – Not Applicable, Cat. II – Category II Non-Friable ACM

The asbestos samples were transported under chain of custody procedures to EMLab P&K (EMLab) in Irvine, California. The asbestos samples were analyzed by PLM techniques in accordance with methodology approved by the U.S. Environmental Protection Agency (EPA). As set forth in the Code of Federal Regulations, 40 CFR Part 763, Appendix A to Subpart F, Section 1.2 and 1.7.2.4, the lower limit of reliability detection for asbestos using the PLM method is approximately one percent (1%) by volume. EMLab's analytical report is provided as an attachment to this letter report, along with the chain-of-custody forms.

Friable ACM is Regulated Asbestos-Containing Material (RACM) and must be removed prior to start of demolition or renovation activities. Category I Non-Friable materials can be reasonably expected to be damaged and made friable during normal demolition activities and should be removed prior to start of demolition. Category II Non-Friable materials are likely to be damaged and made friable during demolition or renovation activities and must be removed prior to start of demolition. All removal of ACM materials including materials non-friable materials left in the building must be conducted by a licensed and registered asbestos abatement contractor in accordance with Cal-OSHA regulation Title 8 CCR Section 1529 and local air quality regulations.

It should be noted that only the materials specifically mentioned within this report have been surveyed by Terracon. Any additional suspect materials identified during the course of construction related activities should be assumed to be asbestos-containing until sampling is conducted to determine asbestos content.

One (1) sample of paint was collected from the building and analyzed for lead at EMLab in Irvine, California by Flamed Atomic Absorption Spectrometry (NIOSH 7082 & EPA 7000B). Table II below provides a summary of the lead sample results.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb-01 / White paint on metal roof flashing	Roof flashing – upper roof at SW Corner / Metal	Good	<63

ppm – parts per million

The laboratory report and chain of custody documentation are provided as attachments to this letter report.


This report has been prepared on behalf of and exclusively for use by Solano County for specific application to their project as discussed herein. The analysis and conclusions in this report are based upon data obtained during the hazardous materials sampling activities. The professional services provided and judgments rendered on this project are consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. Terracon does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, express or implied, is made.

Terracon appreciates this opportunity to provide our environmental consulting services to Solano County. If you have any questions or need additional information, please feel free to call me at 510-899-7005.

Respectfully,

 Steiner, Steff P  
Dec 9 2021 10:23 AM  


Steffen Steiner  
CAC, CDPH Lead I/A  
Office Manager

  
William Frieszell  
CIH, CAC, CDPH Lead I/A  
Senior Industrial Hygienist

Attachments   Laboratory Reports  
                         Chain-of-Custody Forms  
                         Sample Location Diagram  
                         Inspector Certifications



EMLab P&K



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795632

Approved by:

A handwritten signature in black ink, appearing to read "Danny Li", written over a horizontal line.

Approved Signatory  
Danny Li

Dates of Analysis:  
Asbestos PLM: 11-30-2021

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1267)  
NVLAP Lab Code 200757-0

---

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the samples as received and tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.



Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

Total Samples Submitted: 16

Total Samples Analyzed: 16

Total Samples with Layer Asbestos Content &gt; 1%: 1

**Location: 1A, Rolled Roofing-Main Field w/ White Insulation; South Side-Center**

Lab ID-Version‡: 13388327-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1B, Rolled Roofing-Main Field w/ White Insulation; Center-West Side**

Lab ID-Version‡: 13388328-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 1C, Rolled Roofing-Main Field w/ White Insulation; North Side-East Side**

Lab ID-Version‡: 13388329-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
White Insulation	ND
<b>Composite Non-Asbestos Content:</b>	35% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2A, Roof Curb; South Side-HVAC**

Lab ID-Version‡: 13388330-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 2B, Roof Curb; South Side-HVAC**

Lab ID-Version#: 13388331-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 2C, Roof Curb; Center-HVAC**

Lab ID-Version#: 13388332-1

Sample Layers	Asbestos Content
Black Roofing Tar	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Poor

**Location: 3A, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-Southeast**

Lab ID-Version#: 13388333-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	3% Chrysotile
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3B, Perimeter / Penetration Mastic, Black/Gray; Roof Perimeter-West**

Lab ID-Version#: 13388334-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**ASBESTOS PLM REPORT**

**Location: 3C, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Southeast** Lab ID-Version#: 13388335-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 3D, Perimeter / Penetration Mastic, Black/Gray; Roof Penetration-Central** Lab ID-Version#: 13388336-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	ND
<b>Composite Non-Asbestos Content:</b>	5% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4A, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version#: 13388337-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 4B, Vibration Damper Cloth-NE HVAC Unit** Lab ID-Version#: 13388338-1

Sample Layers	Asbestos Content
Gray/White Semi-Fibrous Material	ND
<b>Composite Non-Asbestos Content:</b>	25% Glass Fibers
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Terracon Consultants, Inc. - Emeryville  
 C/O: Mr. Steffen Steiner  
 Re: R1217698; Solano County Fleet Bldg-3255 N  
 Texas St., Fairfield

Date of Sampling: 11-22-2021  
 Date of Receipt: 11-24-2021  
 Date of Report: 11-30-2021

**ASBESTOS PLM REPORT****Location: 5A, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388339-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 5B, Duct Sealant, Gray; NE HVAC Unit**

Lab ID-Version‡: 13388340-1

Sample Layers	Asbestos Content
Gray Sealant	ND
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6A, Asphalt Roof Shingle and Felt; Upper Roof-SE**

Lab ID-Version‡: 13388341-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

**Location: 6B, Asphalt Roof Shingle and Felt; Lower Roof-NW**

Lab ID-Version‡: 13388342-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Shingle with Pebbles	ND
Black Roofing Felt	ND
<b>Composite Non-Asbestos Content:</b>	35% Cellulose
<b>Sample Composite Homogeneity:</b>	Moderate

The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by any agency of the federal government. Eurofins EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



# Terracon

### \*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT\*\*\*

☒ PM - S. Steiner  
ssteiner@terracon.com

☐ PM - K. Schroeter  
kmschroeter@terracon.com

☐ PM - K. Grim  
kmpilgrim@terracon.com

☐ PM - M. Benefield  
mstbenefield@terracon.com

☐ PM - T. Kattchee  
takattchee@terracon.com

☐ PM - W. Frieszell  
wmfrieszell@terracon.com

☐ PM - D. Block  
David.block@terracon.com

☐ denise.walleni@terracon.com  
Engineering Assistant

☐ eric.dyer@terracon.com  
Engineering Assistant

### ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)  
☐ Stop Analysis at First Positive  
☐ Point Count Analysis (400-point)

1 of 2

Project Name/ Address/ Building No. Solano County Fleet Building - 3255 N. Texas St. Fairfield

Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>01</u>	Material Description: <u>Roller Roofing - Main Field, w/ white insulation</u>	
Sample ID	Sample Location & Material Location	Quantity:
<u>1A</u>	<u>South Side - Center</u>	
<u>1B</u>	<u>Center - West Side</u>	
<u>1C</u>	<u>North Side - East Side</u>	
HM# <u>02</u>	Material Description: <u>Roof Gulp</u>	
Sample ID	Sample Location & Material Location	Quantity:
<u>2A</u>	<u>South Side - HVAC</u>	
<u>2B</u>	<u>" " "</u>	
<u>2C</u>	<u>Center - HVAC</u>	
HM# <u>03</u>	Material Description: <u>Perimeter / Penetration Mastic, Black / Gray</u>	
Sample ID	Sample Location & Material Location	Quantity:
<u>3A</u>	<u>Roof Perimeter - Southeast</u>	
<u>3B</u>	<u>" " - West</u>	
<u>3C</u>	<u>" Penetration - Southeast</u>	
HM#	Material Description:	
Sample ID	Sample Location & Material Location	Quantity:
<u>3D</u>	<u>Roof Penetration - Central</u>	
HM# <u>04</u>	Material Description: <u>Vibration Damper Cloth</u>	
Sample ID	Sample Location & Material Location	Quantity:
<u>4A</u>	<u>NE HVAC Unit</u>	
<u>4B</u>	<u>" " "</u>	

Relinquished By: Steff Steiner

Signature: [Signature]

Date/Time: 11/22/21

Received By: \_\_\_\_\_

Signature: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_

Signature: \_\_\_\_\_

Date/Time: 11/24/2021

Received By: \_\_\_\_\_

Signature: \_\_\_\_\_

Date/Time: \_\_\_\_\_

002795632



\*\*\*E-MAIL REPORT TO: SEE BELOW PROJECT MANAGER (PM)\*\*\*

- ☒ PM - S. Steiner  
ssteiner@terracon.com
- ☐ PM - K. Schroeter  
kmschroeter@terracon.com
- ☐ PM - K. Pilgrim  
kmpilgrim@terracon.com
- ☐ PM - M. Benefield  
msbenefield@terracon.com
- ☐ PM - T. Kattichee  
takattichee@terracon.com
- ☐ PM - W. Frieszell  
wmfrieszell@terracon.com
- ☐ PM - D. Block  
David.block@terracon.com
- ☐ denise.wallin@terracon.com  
Engineering Assistant
- ☐ eric.dyer@terracon.com  
Engineering Assistant

ACM BULK SAMPLE DATA SHEET

- ☒ PLM Analysis (Analyze all samples)
- ☐ Stop Analysis at First Positive
- ☐ Point Count Analysis (400-point)

2 of 2

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield

Project# R1217698 Sampled By: Steiner/Reed Sampling Date: 11/22/21

Sample(s) sent to: ☐ MAL ☐ ASB TEM ☒ EMLAB ☐ Other

TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM# <u>05</u>	Material Description: <u>Duct Sealant, Gray</u>
Sample ID	Sample Location & Material Location
<u>SA</u>	<u>NE HVAC Unit</u>
<u>SB</u>	<u>" "</u>
HM# <u>06</u>	Material Description: <u>Asphalt Roof Shingle &amp; Felt</u>
Sample ID	Sample Location & Material Location
<u>6A</u>	<u>Upper Roof - SE</u>
<u>6B</u>	<u>Lower Roof - NW</u>
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location
HM#	Material Description:
Sample ID	Sample Location & Material Location

Relinquished By: Steff Steiner

Received By: \_\_\_\_\_

Relinquished By: \_\_\_\_\_

Received By: \_\_\_\_\_

Signature: [Signature]

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Date/Time: 11/22/21

Date/Time: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Date/Time: \_\_\_\_\_



Report for:

**Mr. Steffen Steiner**  
**Terracon Consultants, Inc. - Emeryville**  
1466 66th Street  
Emeryville, CA 94608

---

Regarding: Project: R1217698; Solano County Fleet Bldg-3255 N Texas St., Fairfield  
EML ID: 2795635

Approved by:



Laboratory Manager  
Danny Li

Dates of Analysis:

Lead - Flame AA: 11-30-2021

Service SOPs: Lead - Flame AA (EM-BC-S-8443)  
AIHA-LAP, LLC accredited service, Lab ID #178697

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All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. Due to the nature of the analyses performed, field blank correction of results is not applied. The results relate only to the samples as received and tested. Sample size, as it relates to Wipe samples only, is supplied by the client.

Eurofins EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Eurofins EMLab P&K's LabServe® reporting system includes automated fail-safes to ensure that all AIHA-LAP, LLC quality requirements are met and notifications are added to reports when any quality steps remain pending.



Client: Terracon Consultants, Inc. - Emeryville  
C/O: Mr. Steffen Steiner  
Re: R1217698; Solano County Fleet Bldg-3255 N  
Texas St., Fairfield

Date of Sampling: 11-22-2021  
Date of Receipt: 11-24-2021  
Date of Report: 11-30-2021

**LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY**

Location:	Pb-01: White, Metal, Roof Flashing; Upper Roof-SW Corner
Comments (see below)	None
Lab ID-Version‡:	13388238-1
Analysis Date:	11/30/2021
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	63 ppm
Sample size	0.1578 grams
§ Total Lead Result	< 63 ppm

**Comments:**

Sample results have not been corrected for blank values.

Bulk samples are not covered under the AIHA-LAP, LLC service accreditation.

Wipe samples must meet ASTM E1792 criteria. Method Reporting Limits may not be valid for non-ASTM E1792 wipe samples.

\*Sample preparation and analytical methods are based upon NIOSH 7082 and EPA 7000B.

† The Method Reporting Limit is the minimum concentration of Lead that the laboratory can confidently detect in the sample.

§ Total Lead Result has been rounded to two significant figures to reflect analytical precision.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".



002795635

**Terracon**

***E-MAIL REPORT TO: PROJECT MANAGER (PM)***			<b>LEAD PAINT SAMPLE DATA SHEET</b>	
<input type="checkbox"/> denise.wallen@terracon.com Engineering Assistant	<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis <input checked="" type="checkbox"/> Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com	<input type="checkbox"/> PM - K. Schroeter kschroeter@terracon.com		PAGE <u>1</u> OF <u>1</u>	
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee tekattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com

Project Name/ Address/ Building No. Solano County Fleet Bldg. - 3255 N. Texas St., Fairfield  
 Project# R1217698 Sampled By: Steiner / Reed Sampling Date: 11/22/21  
 Sample(s) sent to: ☐ MAL ☒ EMSL ☐ Aerobiology ☐ Quantem Other \_\_\_\_\_  
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-5 Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb-01	Paint Color: <u>White</u> Substrate: <u>Metal</u> Component: <u>Roof Flashing</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>Upper Roof - SW Corner</u>	I
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By:

Steve Steiner

Signature:

Date/Time:

11/22/21

Received By:

Signature:

Date/ Time:

11/24 @ 10:50

Received By:

Signature:

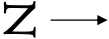
Date/Time:



Fleet Building  
Solano County

Pre-Renovation  
Roof Survey

3255 N. Texas Street  
Fairfield, California



Not to Scale

Date	November 2021	Drawn By	SPS
Project Number	R1217698	Checked By	WMF
Sheet Name	Roof - Sample Location Diagram		
Sheet Number	Figure I		

## DEPARTMENT OF INDUSTRIAL RELATIONS

Division of Occupational Safety and Health

Asbestos Certification &amp; Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

(916) 574-2993 Office <http://www.dir.ca.gov/dosh/asbestos.html> [acru@dir.ca.gov](mailto:acru@dir.ca.gov)

812034464T

321

October 29, 2020

Michael H Reed  
2647 Lone Avenue  
Castro Valley CA 94546

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

Please notify our office via U.S. Postal Service or other carrier of any changes in your mailing or work address within 15 days of the change.

Sincerely,

Jeff Ferrell  
Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal – Card Attached (Revised 06/2020)





# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Micheal Reed**

**CERTIFICATE TYPE:**

Lead Sampling Technician

**NUMBER:**

LRC-00000224

**EXPIRATION DATE:**

5/21/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.



State of California  
Division of Occupational Safety and Health  
**Certified Asbestos Consultant**

**Steffen Paul Steiner**

Name



Certification No. **92-0850**

Expires on **01/08/22**

This certification was issued by the Division of Occupational Safety and Health as authorized by Sections 7180 et seq. of the Business and Professions Code.



STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH



# LEAD-RELATED CONSTRUCTION CERTIFICATE

**INDIVIDUAL:**



**Steffen Steiner**

**CERTIFICATE TYPE:**

Lead Inspector/Assessor

**NUMBER:**

LRC-00005586

**EXPIRATION DATE:**

5/15/2022

Disclaimer: This document alone should not be relied upon to confirm certification status. Compare the individual's photo and name to another valid form of government issued photo identification. Verify the individual's certification status by searching for Lead-Related Construction Professionals at [www.cdph.ca.gov/programs/clppb](http://www.cdph.ca.gov/programs/clppb) or calling (800) 597-LEAD.