7

WESTERN SERVICE AREA

ENGINEERING SERVICES

AWP

STATEMENT OF WORK

ROOF REPLACEMENT

SAN LUIS OBISPO, CALIFORNIA

SOW & SPECIFICATIONS
FOR REPLACING ROOFING AT ATCT
San Luis Obispo, California

PROJECT LOCATION:
San Luis Obispo Municipal Airport
925 Airport Drive
San Luis Obispo, California 93401

1- BASE SCOPE:

The Subcontractor shall furnish all labor, materials, equipment, supervision and all other services required to replace the roof at ATCT at SBP. Attached drawings are for reference only, site visit encouraged. Approximate quantities ATCT Cab roof 361 sq. ft. Roofing consist of metal decking with about 4 inch thickness which includes radiant barrier, roof insulation and roofing membrane and ¾" plywood followed by ¼" thick metacylics.

The scope of work includes but not limited to:

- Remove and dispose of existing roofing system from the SBP ATCT cab roof.
- Provide and install roof hatch guardrail kit with self closing gate, galvanized finish. to meet code compliance.
- Remove and replace all roof drains.
- Remove and reset grounding counterpoise from roof to adjacent parapet wall.
- Remove debris and trash generated from work and dispose of the debris per local and state requirements, daily.

All safety, security, and protections rules and regulation required by the federal, state and local entities shall be followed and adhered to. Any deviation from these rules may result in work stoppage by the FAA COR.

MATERIAL OPTIONS :

The material option shall be for entire roof areas to meet the specifications listed at the end of this document in Section 07 54 23 – Thermoplastic Polyolefin (TPO) roofing:

2- INSTALLATION DIRECTIONS:

The roofing material used for the Air Traffic Control Tower shall follow the recommended manufacturers' recommendations and Section 07 54 23.

3- SITE RESTRICTION:

Work hours will be restricted from 0700 – 1600 and require coordination with local air traffic to have the least impact on the NAS. All contractors and subcontractors shall be accompanied by the onsite COR.

4- SUBMITTALS:

The subcontractor shall provide the following documents.

1. Project Health & Safety Plan.
2. Product Safety Data Sheets.
3. List of all employees on site.
4. Schedule.

5- SAFETY REQUIREMENTS:

The contractor is solely responsible for the safety and welfare of workers on the project and the public around the construction site. Contractor shall take precautions to adequately safeguard the conditions of all personal on or near the site. Comply with the regulations of the Occupational

Safety and Health Standards (OSHA), 29 CFR Part 1926. If COR deems that the contractor is not safe, he/she has the right to stop all work until the contractor corrects the safety violation. contractor shall submit a Health and Safety Plan for this project. The Health and Safety Plan shall identify the competent safety individual for the project to monitor safety and identify safety hazards.

All existing equipment and materials removed from the project area shall become property of the contractor. contractor shall adhere to local government disposal regulations.

Contractors shall maintain the job site in a neat and orderly condition; this includes the daily removal of rubbish, waste and tools, equipment, and materials not required for the work in progress.

6- SCHEDULING:

The contractor shall submit a project schedule after award.

7- PERFORMANCE TIME:

Work shall start after notice to proceed (NTP) has been issued, and be done diligently and completed in no later than 30 calendar days. The working hours should be M-F from 7:00 AM to 4:00 PM, in coordination with air traffic.No work shall be scheduled for the weekends and official holidays unless approved by Contracting Officer in advance, with no additional cost to government.

The subcontractor shall confine operations, activities, material storage, and employee parking within the areas shown him COR.

8- *GOVERNMENT FURNISHED MATERIAL*:

NONE

9- EXTRA MATERIALS:

NONE.

10- EMERGENCY CONTACT LIST:

The contractor shall provide an emergency contact list of names and telephone numbers for at least the foreman and a backup person so that contact can be made during non-working hours in case there is an emergency situation.

11- PROJECT SUPERVISION:

The contractor shall have a designated project superintendent at the project site at all times during the course of work. A FAA RE will be present for supervision as well.

12- AVAILABILITY OF UTILITIES:

Contractor to provide all utilities to complete the job.

13- PRE CONSTRUCTION MEETING:

Pre-construction meeting will be scheduled prior to start of the work to discuss and respond to any questions the subcontractor may have – and assure the contractor adheres to all technical security and safety requirements. Use of the facility restrooms, water, and power will also be discussed. Compliance with these procedures while on site is mandatory. The date and time for the pre-conference meeting will be determined by the CO at later time.

14- INSPECTIONS:

COR will inspect all work in progress up to completion and final Contractor's Acceptance Inspection (CAI) including all materials, tools, and equipment. Such inspection may extend to all or a part of the work for the preparation, and materials to be used. When contractors are notified by the COR of any non-compliance with the provisions of the contract and the action(s) to be taken, the contractor shall correct the unsafe or unhealthy condition. The CO may stop the work with a "stop work order" if the contractor fails to comply promptly with all or any part of the work being performed. When satisfactory corrective action has been taken to correct the unsafe and unhealthy condition, the contractor may resume work when approved by the CO. The Contractor shall not be allowed any extension of time or compensation for damages by reason of or in connection with such work stoppage.

15- PROTECTION OF EXISTING FACILITY:

The contractor shall take all precautions necessary to protect the existing facilities, equipment, buildings, vegetation, etc., during construction. Any areas damaged by the contractor or any tier subcontractors, shall be repaired or replaced to their original conditions by the contractor at no additional cost to the government. Repairs shall be approved by the RE and shall match to original finish. The contractor shall provide all temporary covers, enclosures, barricades, etc., required to protect the existing facilities.

16- CLEAN UP

Proper clean up and removal of the debris from the job site, including any hazardous waste produced by any paint or construction materials used. The work site shall be kept clean and orderly during the progress of work. After final inspection, but before final acceptance of the

work, all exterior surfaces of the equipment shall be cleaned of dirt, mud, or oil accumulations. All debris shall be removed from the general site area.

17- WARRANTIES:

Documentation for the warranties shall be provided to FAA upon completion of the project. Warranty period shall be a minimum of 10 years manufacturer and 5 years workmanship from the date of the Final Acceptance by the Government. Manufacturer Warrants that the roofing materials will be free from manufacturing defects for a period stated in warranty submittal sheet from the date of installation. The contractor warrants that all workmanship and installation of roofing materials shall be free from defects caused by improper techniques for a period of 5 years from the completion date.

18- APPENDIX:

07 54 23 TPO Roofing

07 72 00 accessories

Asbestos Survey report

WP-D-601-41812 Cab Roof plan and details (reference only)

END OF DOCUMENT

SECTION 07 54 23 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

SUMMARY

A. Section Includes:

1. Mechanically fastened TPO membrane roofing system.
2. Vapor retarder.
3. Roof insulation.

1.2 DEFINITIONS

A. TPO: Thermoplastic polyolefin.

B. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.3 PERFORMANCE REQUIREMENTS

A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.

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. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.

1. Fire/Windstorm Classification: Class 1A-135.
2. Hail Resistance: SH.

D. Energy Performance: Provide roofing system that is listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products. Roofing system shall meet R-30 insulation factor.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

1. Adhesives: Provide VOC documentation.

B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.

1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Roof plan showing orientation of steel roof deck and orientation of membrane roofing and fastening spacings and patterns for mechanically fastened membrane roofing.
4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.

C. Qualification Data: For qualified Installer, names of architects and owners, manufacturer and inspector.

D. 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.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.

F. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.

G. Field quality-control reports.

H. Maintenance Data: For roofing system to include in maintenance manuals.

I. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed and FM Approvals approved for membrane roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

C. Inspector Qualifications: Provide qualifications of a roofing consultant who shall be responsible for field quality control. Inspector shall be an independent testing and field quality control professional with a minimum 5 years experience in similar project size, complexity and system to conduct testing indicated.

D. Source Limitations: Obtain components including roof insulation and fasteners for membrane roofing system from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

E. Exterior Fire-Test Exposure: ASTM E 108, 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.

F. 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.

G. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.

1. Meet with FAA, COTR, Government's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck Installer, 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. Review deck substrate requirements for conditions and finishes, 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.

1.6 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.

1.7 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.

1.8 WARRANTY

A. Special Warranty: Manufacturer’s standard or customized form, without monetary limitation, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of membrane roofing system.
2. Warranty for roofing system shall be a no dollar limit for labor and materials.
3. Warranty Period: 20 years from date of Substantial Completion.

B. Puncture Resistance Warranty: In addition to Special Warranty, Contractor agrees to repair and replace all or part of components of membrane roofing system caused by accidental punctures. Provide a no dollar limit, 20-year warranty.

C. One-Year Warranty Inspection: As part of the one-year warranty inspection, the COTR will conduct an infrared roof survey on any project involving a membrane roofing system. This survey will be conducted in accordance with ASTM C 1153. The Contractor shall be required to replace all damaged materials and to locate and repair sources of moisture penetration, at no additional cost to the FAA.

PART 2 - PRODUCTS

2.1 TPO MEMBRANE ROOFING

A. Fabric-Reinforced Thermoplastic Polyolefin Sheet: ASTM D 6878, internally fabric or scrim reinforced, uniform, flexible TPO sheet.

1. Manufacturers: Subject to compliance with requirements, provide products by Stevens Roofing Systems; Division of JPS Elastomerics. Other available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. Carlisle SynTec Incorporated.

2. Thickness: 80 mils, nominal with a minimum of 34 mils above scrim.
3. Exposed Face Color: White.

2.2 AUXILIARY MEMBRANE ROOFING MATERIALS

A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.

B. Sheet Flashing: Manufacturer's standard unreinforced thermoplastic polyolefin sheet flashing, 45 mils thick, minimum, of same color as sheet membrane. Use 60 mil thick unreinforced thermoplastic polyolefin sheet flashing at parapet, same color as sheet membrane.

C. Bonding Adhesive: Manufacturer's standard, water based. Adhesive use will be confirmed by COTR and shall have low odor.

D. Slip Sheet: Manufacturer's standard, of thickness required for application.

E. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

F. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated or zinc-coated steel sheet, approximately 1 inch wide by 0.05 inch thick, prepunched.

G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.

H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.3 SUBSTRATE BOARDS

A. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, Type X, 5/8 inch thick.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Georgia-Pacific Corporation; Dens Deck.

2. Substrate boards shall be placed directly on metal deck with fasteners.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

2.4 PROTECTION BOARDS

A. Protection Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, Type X, 1/2 inch thick.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   a. Georgia-Pacific Corporation; Dens Deck.

2. Protection board shall be placed on top of rigid insulation; roof membrane shall be placed directly on protection board forming roof assembly.

2.5 VAPOR RETARDER

A. Polyethylene Film: ASTM D 4397, 6 mils thick, minimum, with maximum permeance rating of 0.13 perm.

   1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

2.6 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by TPO membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Approvals-approved roof insulation.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.

C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.7 INSULATION ACCESSORIES

A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

2.8 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick, and acceptable to membrane roofing system manufacturer.

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. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that metal deck is acceptable for installation of roofing system.

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.

C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

D. Close all fresh air intakes/louvers where dust and odors from the roofing activities could enter the building.

E. Coordinate with the COTR the timing of the roofing removals and installation activities with the least potential for disruption of building operations.

3.3 SUBSTRATE BOARD

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.

1. Fasten substrate board to top flanges of steel deck according to recommendations in FM Approvals' "RoofNav" and FM Global Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification.
2. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to membrane roofing system manufacturers' written instructions.

3.4 PROTECTION BOARD

A. Install substrate board over rigid insulation with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.

3.5 VAPOR-RETARDER INSTALLATION

A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively.

   1. Continuously seal side and end laps with tape.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into membrane roofing system.

C. Coordinate with roofing manufacturer location of vapor retarder.

3.6 INSULATION INSTALLATION

A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

E. 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 with insulation.

   1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

F. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.

   1. Fasten insulation according to requirements in FM Approvals' "RoofNav" for specified Windstorm Resistance Classification.
   2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.7 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

A. Mechanically fasten membrane roofing over area to receive roofing and install according to roofing system manufacturer's written instructions.

1. For in-splice attachment, install membranes roofing with long dimension perpendicular to steel roof deck flutes.

B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.

C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.

E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.

F. In-Seam Attachment: Secure one edge of TPO sheet using fastening plates or metal battens centered within membrane seam and mechanically fasten TPO sheet to roof deck.

G. Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet membrane.
2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.

H. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

I. Install membrane roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

3.8 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.10 FIELD QUALITY CONTROL

A. Installation Inspections: Engage a full-time field quality control inspector during roof system installation. The field quality control inspector shall submit inspection report at weekly intervals to Contractor and COR and coordinate with roofing system manufacturer's technical personnel and inspect roofing installation upon completion.

B. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to COR.

1. Electric Field Vector Mapping (EFVM): Testing agency shall survey entire roof area for potential leaks using electric field vector mapping (EFVM).

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

D. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect membrane 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 COR.

B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane 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.

END OF SECTION 07 54 23

SECTION 07 72 00 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Manufacturers.
2. Metal Materials
3. Roof Hatches.

1.2 SUBMITTALS

A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: Show fabrication and installation details for roof accessories. Show layouts of roof accessories including plans and elevations. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other work.

C. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:

1. Size and location of roof accessories specified in this Section.
2. Method of attaching roof accessories to roof or building structure.
3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

D. Samples: For each type of exposed factory-applied[**color**] finish required and for each type of roof accessory indicated, prepared on Samples of size to adequately show color.

E. Warranty: Special warranty specified in this Section.

1.3 QUALITY ASSURANCE

A. Sheet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Pack, handle, and ship roof accessories properly labeled in heavy-duty packaging to prevent damage.

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

1.6 COORDINATION

A. Coordinate layout and installation of roof accessories with [**roofing membrane and base flashing and**]interfacing and adjoining construction to provide leakproof, weathertight, secure, and noncorrosive installation.

1. With COTR's approval, adjust location of roof accessories that would interrupt [**roof drainage routes**] [**roof expansion joints**] <**Insert construction element**>.

1.7 WARRANTY

A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: [**20**] <**Insert number**> years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers listed in other Part 2 articles.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers listed in other Part 2 articles.

2.2 METAL MATERIALS

A. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 coated[**and mill phosphatized for field painting**].

B. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, AZ50 coated.

C. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by hot-dip process and prepainted by coil-coating process to comply with ASTM A 755/A 755M.

1. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 coated.
2. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coated.
3. Exposed Finishes: High-Performance Organic Finish (2-Coat Fluoropolymer): Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.

a. Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements in [**AAMA 2604**] [**AAMA 2605**], except as modified below:

1) Humidity Resistance: [**1000**] [**2000**] hours.
2) Salt-Spray Resistance: [**1000**] [**2000**] hours.

D. Aluminum Sheet: ASTM B 209, alloy and temper recommended by manufacturer for type of use and[**mill**] finish.[**Coil-coat finish as follows:**]

1. Factory-Prime Coating: Where painting after installation is indicated, provide pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat; with a minimum dry film thickness of 0.2 mil.
2. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: Nonspecular as fabricated; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.
3. Class II, Color Anodic Finish: AA-M12C22A32/A34 (Mechanical Finish: Nonspecular as fabricated; Chemical Finish: Etched, medium matte; Anodic Coating: Architectural Class II, integrally colored or electrolytically deposited color coating 0.010 mm or thicker) complying with AAMA 611.

a. Color: [**Light bronze**] [**Medium bronze**] [**Dark bronze**] [**Black**] [**Champagne**] <**Insert color**>.

4. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Acid-chromate-fluoride-phosphate conversion coating; Organic Coating: As specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.

a. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mils, medium gloss.
b. Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**] <**Insert color and gloss**>.

5. High-Performance Organic Finish (2-Coat Fluoropolymer): AA-C12C40R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Conversion coating; Organic Coating: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not

less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with [**AAMA 2604**] [**AAMA 2605**] and with coating and resin manufacturer's written instructions.

a. Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**] <**Insert color and gloss**>.

6. Powder-Coat Finish: Immediately after cleaning and pretreating, electrostatically apply manufacturer's standard baked-polymer thermosetting powder finish. Comply with resin manufacturer's written instructions for application, baking, and minimum dry film thickness.

a. Color and Gloss: [**As indicated by manufacturer's designations**] [**Match Architect's sample**] [**As selected by Architect from manufacturer's full range**] <**Insert color and gloss**>.

E. Aluminum Extrusions and Tubes: ASTM B 221, alloy and temper recommended by manufacturer for type of use, mill finished.

F. Stainless-Steel Shapes or Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304 or Type 316, No. 2D finish.

G. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized to comply with ASTM A 123/A 123M, unless otherwise indicated.

H. Steel Tube: ASTM A 500, round tube, baked-enamel finished.

I. Galvanized Steel Tube: ASTM A 500, round tube, hot-dip galvanized to comply with ASTM A 123/A 123M.

J. Galvanized Steel Pipe: ASTM A 53/A 53M.
1. .

2.3 ROOF HATCHES

A. Roof Hatches: Fabricate roof hatches with insulated double-wall lids and insulated [**single**] [**double**]-wall curb frame with integral deck mounting flange and lid frame counterflashing. Fabricate with welded or mechanically fastened and sealed corner joints. Provide continuous weathertight perimeter gasketing and equip with corrosion-resistant or hot-dip galvanized hardware.

1. [**Available**]Manufacturers:

a. Babcock-Davis; a Cierra Products Inc. Company.
b. Bilco Company (The).
c. Bristolite Skylights.
d. Custom Curb, Inc.
e. Dur-Red Products.
f. Hi Pro International, Inc.

g. J. L. Industries, Inc.
h. Metallic Products Corporation.
i. Milcor Inc.; a Gibraltar Company.
j. Nystrom, Inc.
k. O'Keeffe's Inc.
l. Precision Ladders, LLC.
m. Roof Products & Systems Corporation.
n. ThyCurb; Div of Thybar Corporation.
o. Wasco Products, Inc.
p. Western Canwell.
q. <**Insert manufacturer's name.**>

2. Loads: Fabricate roof hatches to withstand [**40-lbf/sq. ft.**] <**Insert load**> external and [**20-lbf/sq. ft.**] <**Insert load**> internal loads.
3. Type and Size: Single-leaf lid, [**30 by 36 inches**] [**30 by 54 inches**] [**30 by 96 inches**] <**Insert size**>.
4. Type and Size: Double-leaf lid, [**72 by 96 inches**] <**Insert size**>.
5. Curb and Lid Material: [**Galvanized**] [**Aluminum-zinc alloy-coated**] steel sheet, [**0.079 inch**] <**Insert thickness**> thick.
6. Curb and Lid Material: Aluminum sheet, [**0.090 inch**] <**Insert thickness**> thick.
7. Curb and Lid Material: Stainless-steel sheet, [**0.078 inch**] <**Insert thickness**> thick.

   a. Finish: [**Prime painted**] [**Baked enamel**] [**High-performance organic coating**] [**Powder coat**].
   b. Finish: [**Mill**] [**Clear anodic**] [**Color anodic**].

8. Insulation: [**Cellulosic-fiber**] [**Glass-fiber**] [**Polyisocyanurate**] board.
9. Interior Lid Liner: Manufacturer's standard metal liner of same material and finish as outer metal lid.
10. Exterior Curb Liner: Manufacturer's standard metal liner of same material and finish as metal curb.
11. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
12. Fabricate units to minimum height of [**12 inches**] <**Insert height**>, unless otherwise indicated.
13. Sloping Roofs: Where slope or roof deck exceeds 1:48, fabricate hatch curbs with height [**constant**] [**tapered to match slope to level tops of units**].
14. Hardware: [**Galvanized steel**] [**Stainless-steel**] spring latch with turn handles, butt- or pintle-type hinge system, and padlock hasps inside and outside.

    a. Provide 2-point latch on covers larger than 84 inches.
    b. Provide remote-control operation.

15. Ladder Safety Post: Manufacturer's standard ladder safety post. Post to lock in place on full extension. Provide release mechanism to return post to closed position.

    a. Test Load: <**Insert load.**>
    b. Height: [**42 inches**] <**Insert height**> above finished roof deck.
    c. Material and Finish: [**Steel tube, galvanized**] [**Steel tube, baked enameled**] [**Stainless steel, mill finished**] [**Aluminum, mill finished**].
    d. Diameter: Pipe with [**1-5/8-inch**] <**Insert diameter**> OD tube.

16. Safety Railing System: Manufacturer's standard complete system including rails, clamps, fasteners, safety barrier at railing opening, and all accessories required for a complete installation.

    a. Test Load: <**Insert load.**>
    b. Height: [**42 inches**] <**Insert height**> above finished roof deck.
    c. Pipe or Tube: 1-1/4-inch ID galvanized pipe or 1-5/8-inch OD galvanized tube.
    d. Flat Bar: 2-inch- high by 3/8-inch- thick galvanized steel.
    e. Chain Passway Enclosure: Galvanized proof coil chain with quick link on fixed end.
    f. Self-Latching Gate: Fabricated of same materials and rail spacing as safety railing system. Provide manufacturer's standard hinges and self-latching mechanism.
    g. Pipe Ends and Tops: Covered or plugged with weather-resistant material.
    h. Provide weep holes or another means to drain entrapped water in hollow sections of handrail and railing members that are exposed to exterior or to moisture from condensation or other sources.
    i. Fabricate joints that will be exposed to weather in a watertight manner.
    j. Close exposed ends of handrail and railing members with prefabricated end fittings.
    k. Fasteners: Manufacturer's standard.

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 and is ready to receive roof accessories.
    2. Verify dimensions of roof openings for roof accessories.
    3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install roof accessories according to manufacturer's written instructions. Anchor roof accessories securely in place and capable of resisting forces specified. Use fasteners, separators, sealants, and other miscellaneous items as required for completing roof accessory installation. Install roof accessories to resist exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Install roof accessories to fit substrates and to result in watertight performance.

C. 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 manufacturer.

1. Coat concealed side of [**uncoated aluminum**] [**stainless-steel**] roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing exposed-to-view components of roof accessories 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 by roof accessory manufacturers for waterproof performance.

D. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.

E. Roof Curb Installation:

1. Set roof curb so top surface of roof curb is level.

F. Equipment Support Installation:

1. Set equipment support so top surface of equipment support is level.

G. Roof Hatch Installation:

1. Check roof hatch for proper operation. Adjust operating mechanism as required. Clean and lubricate joints and hardware.
2. Attach safety railing system to roof hatch curb.
3. Attach ladder safety post according to manufacturer's written instructions.

H. Heat and Smoke Vent Installation: Locate, install, and test heat and smoke vents according to NFPA 204.

1. Check heat and smoke vent for proper operation. Adjust operating mechanism as required.

I. Gravity Ventilator Installation:

1. Check relief vents for proper operation and unrestricted airflow.
2. Install security grilles. Weld bar intersections and ends of bars to structural frame or primary curb walls.

J. Roof Walkway Installation:

1. Verify location of points of access to roof-mounted equipment via use of roof walkways.
2. Remove ballast from top surface of low-slope roofing section surface at the full area of contact surface of roof walkway supports.
3. Verify that roof walkway support isolation pads are in place prior to placement of roof walkway onto low-slope roofing section surface.

K. Preformed Flashing Installation:

1. Secure to roof membrane according to vent and stack flashing manufacturer's written instructions.

L. Seal joints with [**elastomeric**] [**butyl**] sealant as required by manufacturer of roof accessories.

3.3 TOUCH UP

A. Touch up factory-primed surfaces with compatible primer ready for field painting in accordance with Division 09 painting Sections.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.4 CLEANING

A. Clean exposed surfaces according to manufacturer's written instructions.

END OF SECTION 07 72 00

ASBESTOS SURVEY REPORT

Subject Property Located at

Federal Aviation Administration (FAA)
925 Airport Drive
San Luis Obispo, California 93401

Prepared for:

Federal Aviation Administration (FAA)
Jose Salmeron
4600 East Spring Street
Long Beach, California 90805

Prepared by:

Project No. 140037 - AS

Survey Date: June 10th, 2026
Report Date: June 15th, 2026

Ibrahim Sobeih
Certified Asbestos Consultant 06-4078

1.0 EXECUTIVE SUMMARY

At the request of Federal Aviation Administration (FAA), Jose Salmeron (herein referred to as the Client), Titan Environmental Solutions, Inc. (TES) conducted an asbestos survey at 925 Airport Drive, San Luis Obispo, California (herein referred to as the Subject Property).The Subject Property is a commercial property and was occupied at the time of the survey. The asbestos survey scope of work was limited to the building materials and areas identified by the Client at the Subject Property (herein referred to as the survey area) as a result of the following:

- renovation.

The survey was conducted on June 10th, 2026 by Mr. Ranferi Palacios, a California Division of Occupational Safety and Health (DOSH) Certified Site Surveillance Technician (CSST No. 25-7886), working under the direction of Mr. Ibrahim Sobeih, a California Division of Occupational Safety and Health (DOSH) Certified Asbestos Consultant (CAC No. 06-4078). This report provides a summary of the survey activities and findings as well as conclusions and recommendations.

No asbestos containing materials (ACM) / asbestos containing construction materials (ACCM) or materials containing asbestos were identified in the survey area at the Subject Property. Any materials that have not been identified in this report should be considered suspect ACMs/ACCMs and handled as ACM unless sampled and proven to be non-ACM by a DOSH/Cal-OSHA Certified Asbestos Consultant.

2.0 SURVEY PURPOSE AND GOVERNING REGULATIONS

The purpose of the asbestos survey was to determine if specific building materials identified by the Client are asbestos containing materials (ACM) and/or asbestos containing construction materials (ACCM). Note: Building materials that are scheduled for disturbance or have been disturbed must comply with the United States Environmental Protection Agency (EPA's) National Emissions Standards for Hazardous Air Pollutants (NESHAP) asbestos regulations [Title 40, Code of Federal Regulations, Part 61, Subpart M (40 CFR 61M)], the California Occupational Safety and Health Administration (Cal/OSHA) Asbestos Construction Standard [Title 8, California Code of Regulations, Section 1529 (8 CCR 1529)], and local air quality management or air pollution control district regulations.

3.0 REGULATORY DEFINITIONS AND STANDARDS

The Environmental Protection Agency (EPA) defines asbestos-containing material (ACM) as follows:

- **Non-ACM** is defined as any material that does not contain asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM).
- **ACM** is defined by EPA as any material containing more than one percent (>1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM). In order to verify a material with detected concentrations of asbestos is not an ACM, the EPA requires PLM point count analysis to confirm the asbestos concentration is

<1.0%.

The Occupational Safety and Health Administration (OSHA) and the California Division of Occupational Safety and Health (DOSH/Cal-OSHA) use the following definitions for materials containing asbestos:

- **ACM** is defined by OSHA and DOSH/Cal-OSHA as any material containing more than one percent (>1%) asbestos.
- **Asbestos-containing construction material (ACCM)** is defined by DOSH/Cal-OSHA as any manufactured construction material containing greater than one tenth of one percent (>0.1%) asbestos.
- **OSHA and DOSH/Cal-OSHA** regulates materials containing any detectable concentrations of asbestos (8 CCR 1529).

4.0 SURVEY – INSPECTION AND SAMPLING

The visual inspection included the following activities: (1) identifying homogenous areas of suspect ACM and/or ACCM, (2) determining friability and classification [surfacing = material that is spray or trowel applied, thermal system insulation (TSI) = material used to prevent heat gain/loss or condensation, or miscellaneous = material that is not surfacing or TSI] of each homogenous area of suspect ACM, and (3) assessing the condition of each homogenous area of suspect ACM.

Visual inspection and physical handling is performed for all tested suspect materials to ensure proper friability classification and condition - materials are assessed for any damage by impact, water, fire, deterioration, or delaminating from their substrata.

Once assessments are made, the material is assigned a condition. These conditions are defined as follows:

- **Good Condition** indicates no visible damage/deterioration.
- **Damaged Condition** exists if the area of damage is less than 10% if evenly distributed, or less than 25% if localized.
- **Significantly Damaged Condition** exists if the area of damage is greater than 10% if evenly distributed, or greater than 25% if localized.

The bulk sampling included the following activities: (1) developing a representative sampling plan for each homogenous area of suspect asbestos containing material based on the classification and estimated quantity, and (2) collecting representative bulk samples of each homogenous area of suspect asbestos containing material in accordance with 40 CFR 763.86 from the survey area at the Subject Property as identified by the Client. Efforts are made to obtain the samples from inconspicuous areas. Each sample is placed in a sealed container. The sealed container is labeled and placed in a larger storage bag. Throughout the process, care is taken to prevent cross-contamination of the collected samples. Sampling equipment is cleaned after each sample is obtained. In addition, sample containers are placed directly beneath each sample location, when feasible, to collect any materials which may become dislodged during the sampling process. Any debris generated by the sampling is cleaned by wet-cleaning methods.

Samples are documented by entering the sample data on the chain of custody (COC), including a description of the material, sample number, location, condition, friability, and estimated quantity. Typically, the sample location is marked on an 8-1/2 x 11-inch floor plan (not to scale).

TES collected six (6) samples, representing two (2) homogenous materials identified in the survey area of the Subject Property. The samples were submitted under proper chain of custody (COC) documentation and analyzed for asbestos content by the laboratory listed below. Bulk sample analysis was conducted by Polarized Light Microscopy (PLM) with dispersion staining as described in the "Method for the Determination of Asbestos in Bulk Building Materials," Method EPA-600/R-93/116 (July 1993, Part 1). The information for the laboratory that was utilized for the analysis of the asbestos bulk samples is provided below.

Eurofins EMLab P&K Pomona
931 Corporate Center Drive
Pomona, California 91768
866-888-6653
National Voluntary Laboratory Accreditation Program (NVLAP No. 600282-0).

The summary of the analytical results are provided in the following Table 1.

Table 1
Asbestos Survey Results
Federal Aviation Administration (FAA), 925 Airport Drive, San Luis Obispo, California 93401

Sample No.	Sample Locations[1]	Material Description	Class.	Material Location(s)*	Friable/ Non-Friable	Condition (G,D,SD)	Estimated Quantity*	Analytical Results	Cat.
0610-01-01 0610-01-02 0610-01-03	E. End Tower Roof Center Tower Roof W. End Tower Roof	Blue / White PVC Roofing Material	Misc.	FAA Tower Roof	NF	G	350 SF	None Detected	Non-ACM
0610-02-04 0610-02-05 0610-02-06	E. End Tower Roof Center Tower Roof W. End Tower Roof	Yellow Roofing Insulation	TSI	FAA Tower Roof	F	G	350 SF	None Detected	Non-ACM

N = North, E = East, W = West, S = South, SF = Square Feet, LF = Linear Feet
Classification (Class.): Misc. = Miscellaneous, Surf. = Surfacing, TSI = Thermal System Insulation
Condition: G = Good, D = Damaged, SD = Significantly Damaged

* Locations and quantities are estimates based on accessible materials located in the survey area only. Additional locations and quantities may be present at the Subject Property.

** In Accordance to 40 CFR Section 61.141 and US EPA Applicability Determination Index Control Number: C112, if the amount by visual estimation appears to be less than 10 percent, the owner or operator may (1) assume the amount to be greater than 1 percent and treat the materials asbestos-containing material, or (2) require verification of the amount by point counting. If a result obtained by point count is different from a result obtained by visual estimation, the point count result will be used. Please note the Certified Asbestos Consultant will assume any material that is <1% analyzed via PLM and not verified by point count as Asbestos Containing Material (ACM).

I, Ibrahim Sobeih, CAC #06-4078 assumes that any material not analyzed due to stop at first positive, material listed in the above table with "<1%" asbestos and/or "Assumed Asbestos", shall be considered asbestos-containing material (ACM).

***OSHA and DOSH/Cal-OSHA regulate materials containing any detectable concentrations of asbestos (8 CCR 1529).**

5.0 CONCLUSIONS & RECOMMENDATIONS

TES has the following conclusions and recommendations based on the findings of this asbestos survey:

- No ACM/ACCM or materials containing asbestos were identified in the samples taken at the Subject Property.
- Any materials have not been identified in this report should be considered suspect ACM/ACCM and handled as ACM unless sampled and proven to be non-ACM by a DOSH Certified Asbestos Consultant.
- Please note that the laboratory may dispose of all samples after a thirty (30) calendar day period. Any additional analysis must be requested within thirty (30) days by the Client.

6.0 LIMITATIONS

TES is committed to providing state-of-the-art environmental consulting services that are of the highest quality. However, asbestos survey work is not an exact science. The possibility of field and general conditions beyond TES control that affect our work or that present a concern for the safety of our employees, our consultants, building occupants and the public at the site, and insurance constraints, requires that we qualify the services we provide with the following limitations:

- In accordance with the Client specified scope of work, this survey was limited to accessible building materials; no destructive investigation was performed. Additional suspect materials located in inaccessible areas and/or outside the scope of this survey may be present at the Subject Property.
- Reasonable effort is made by TES personnel to locate and sample all suspect ACM/ACCM. However, for any building there is the possibility that various types of unique or concealed ACM/ACCM may exist undetected. In addition, sampling and laboratory analyses constraints typically hinder the investigation. TES does not warrant, guarantee or profess to have the ability to locate or identify all ACM/ACCM in a building.
- Confined spaces and areas determined by TES personnel to be unsafe to access, are excluded from the scope of work.
- TES is not, and has no responsibility as, a generator, operator, treater, storer, transporter or disposer of hazardous materials or waste found or identified as a result of TES work.
- TES does not guarantee or warrant that the Subject Property or workplace are safe, nor does TES involvement in this property relieve the Client, building owner/operator or tenant of any continuing responsibility of providing a safe property or workplace.
- This report was based on those conditions observed on the day(s) the field evaluation was accomplished. In the event that changes in the nature of the property have occurred, or additional relevant information about the property is subsequently discovered, the findings and recommendations contained in this report may not be valid unless these changes and additional relevant information are reviewed and the conclusion of this report is modified and verified in writing.
- It is understood that the asbestos survey is a non-destructive assessment of potential asbestos-containing construction materials and is to be used expressly for the purpose of evaluating the asbestos risk relative to the expected material disturbance at the Subject Property. Because

destructive investigation has not been performed during the survey, the report may not reveal concealed ACM/ACCM. Subsequently, additional investigation including construction documents review and/or destructive investigation is recommended as a precaution to prevent accidental exposure when construction or demolition is planned for this Subject Property.

- It is understood that this is a modified survey and results are limited to the specific areas and materials sampled. This report is not valid for use outside of the specific areas identified by the Client or by individuals not associated with the currently planned work at the Subject Property.

Report for:

EPK POMONA
Titan Environmental Solutions, Inc.
1521 East Orangethorpe Ave, Ste B
Fullerton, CA 92831

Regarding: Eurofins Built Environment Testing West, LLC
Project: 140037-AS; Federal Aviation Administration (FAA) - 925 Airport Drive, San Luis Obispo, CA
EML ID: 4574224

Approved by:

Regional Laboratory Director
Carlos Rivadeneyra

Dates of Analysis:
Asbestos PLM: 06-15-2026

Service SOPs: Asbestos PLM (EPA 40CFR App E to Sub E of Part 763 & EPA 600/R-93-116, EBET-PLM-SOP83921)
NVLAP Lab Code 600282-0

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 Built Environment Testing West, LLC ("the Company"), a member of the Eurofins Built Environment Testing group of companies, 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 Built Environment Testing West, LLC
931 Corporate Center Drive, Pomona, CA 91768
(833) 465-5857 www.eurofinsus.com/Built

Client: Titan Environmental Solutions, Inc.
C/O: EPK POMONA
Re: 140037-AS; Federal Aviation Administration (FAA) - 925 Airport Drive, San Luis Obispo, CA

Date of Sampling: 06-10-2026
Date of Receipt: 06-11-2026
Date of Report: 06-15-2026

ASBESTOS PLM REPORT

Total Samples Submitted:	6
Total Samples Analyzed:	6
Total Samples with Layer Asbestos Content > 1%:	0

Location: 0610-01-01, Blue / White PVC Roofing Material

Lab ID-Version‡: 23045740-1

Sample Layers	Asbestos Content
Blue Roofing Material	ND
White Roofing Material	ND
Gray Roofing Material	ND
Sample Composite Homogeneity:	Moderate

Location: 0610-01-02, Blue / White PVC Roofing Material

Lab ID-Version‡: 23045741-1

Sample Layers	Asbestos Content
Blue Roofing Material	ND
White Roofing Material	ND
Gray Roofing Material	ND
Sample Composite Homogeneity:	Moderate

Location: 0610-01-03, Blue / White PVC Roofing Material

Lab ID-Version‡: 23045742-1

Sample Layers	Asbestos Content
Blue Roofing Material	ND
White Roofing Material	ND
Gray Roofing Material	ND
Sample Composite Homogeneity:	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. The Company 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.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

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 Built Environment Testing West, LLC
931 Corporate Center Drive, Pomona, CA 91768
(833) 465-5857 www.eurofinsus.com/Built

Client: Titan Environmental Solutions, Inc.
C/O: EPK POMONA
Re: 140037-AS; Federal Aviation Administration (FAA) - 925 Airport Drive, San Luis Obispo, CA

Date of Sampling: 06-10-2026
Date of Receipt: 06-11-2026
Date of Report: 06-15-2026

ASBESTOS PLM REPORT

Location: 0610-02-04, Yellow Roofing Insulation

Lab ID-Version‡: 23045743-1

Sample Layers	Asbestos Content
Silver Foil	ND
Brown Paper	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 0610-02-05, Yellow Roofing Insulation

Lab ID-Version‡: 23045744-1

Sample Layers	Asbestos Content
Silver Foil	ND
Brown Paper	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: 0610-02-06, Yellow Roofing Insulation

Lab ID-Version‡: 23045745-1

Sample Layers	Asbestos Content
Silver Foil	ND
Brown Paper	ND
Yellow Insulation	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	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. The Company 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.

All components not quantified as asbestos content and non-asbestos content are considered to be non-fibrous matrix components. Matrix components may include, but are not limited to, gypsum, paint, silicate minerals, vinyl, binder, calcium carbonate, tar, and foam.

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 Built Environment Testing West, LLC
931 Corporate Center Drive, Pomona, CA 91768
(833) 465-5857 www.eurofinsus.com/Built

Client: Titan Environmental Solutions, Inc.
C/O: EPK POMONA
Re: 140037-AS; Federal Aviation Administration (FAA) - 925 Airport Drive, San Luis Obispo, CA

Date of Sampling: 06-10-2026
Date of Receipt: 06-11-2026
Date of Report: 06-15-2026

ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst

Analyst: Vivian Le

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. The Company 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.

‡ 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".

Asbestos Chain of Custody

TITAN ENVIRONMENTAL SOLUTIONS

Project No.: 140037-AS

Project Name: Federal Aviation Administration (FAA)

Project Address: 925 Airport Drive, San Luis Obispo, CA 93401

Sampled by: Ramfer Palacios

Sample Date: 06-10-26

Send Results to: RESULTS.SOCAL@TITAN-ENVIRO.COM

Analysis: PLM Bulk Asbestos Analysis by EPA 600/R-93/116 / Other:

Special Instructions:

☐ Analyze all wall system samples; **Stop at first positive** (>1%) for all single layer, homogenous materials (D)

☐ Stop at first positive (>1%) for **ALL** wall system samples and/or single layer, homogenous materials (G)

☑ Analyze **ALL** samples.

☐ Other:

TAT: 3 hr / 6 hr / 24 hr / Other: 72 hr

☑ Occupied
☐ Unoccupied

Sample Number		Sample Location	Material Description	Material Locations	Quantity
0610-01	01	E. End, Tower Roof	Size/Color: blue/white	FAA Tower Roof	350
	02	Center, Tower Roof	Material: PVC Roofing Material		
	03	W. End, Tower Roof	Texture/Pattern: NA		
			Assembly/Layers: NA		
			Friable / Non-Friable		
			TSI / Surf / Misc.		
			Condition: G / D / SD		
0610-02	04	E. End, Tower Roof	Size/Color: Yellow	FAA Tower Roof	350
	05	Center, Tower Roof	Material: Roofing Insulation		
	06	W. End, Tower Roof	Texture/Pattern: NA		
			Assembly/Layers: NA		
			Friable / Non-Friable		
			TSI / Surf / ~~Misc.~~		
			Condition: G / D / SD		
			Size/Color		
			Material		
			Texture/Pattern		
			Assembly/Layers		
			Friable / Non-Friable		
			TSI / Surf / Misc.		
			Condition: G / D / SD		

004574224

Relinquished (sign): [signature] Name (print): Ramfer Palacios Date/Time: 06-10-26 5:30pm ☑ Secure Dropbox

Received by Lab (sign): [signature] Name (print): Sojan Peon Date/Time: 06-11-26 8AM ☐ Secure Courier Service

I.S:06/10/26

CORPORATE ADDRESS: 1521 EAST ORANGETHORPE AVENUE, SUITE B, FULLERTON, CA 92831 * PHONE: 888-948-4826

VERSION: 01-14-2026

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 600282-0

Eurofins Built Environment Testing West- Pomona, CA

Pomona, CA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique on ISO/IEC 17025).

2025-07-01 through 2026-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Eurofins Built Environment Testing West- Pomona, CA
931 Corporate Center Drive
Pomona, CA 91768
Quynh Nguyen
Phone: 800-651-4802
Email: quynh.nguyen@et.eurofinsus.com
https://www.eurofinsus.com/environment-testing/built-environment

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 600282-0

Bulk Asbestos Analysis

Code	***Description***
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

For the National Voluntary Laboratory Accreditation Program

140037-AS
06-10-26
Federal Aviation Administration (FAA)
925 Airport Drive, San Luis Obispo, CA 93401

N ←

Scanned with CamScanner

State of California
Division of Occupational Safety and Health
Certified Site Surveillance Technician

Ranferi Palacios

Name

Certification No. **25-7886**

Expires on **05/16/2027**

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
Division of Occupational Safety and Health
Certified Asbestos Consultant
Ibrahim M Sobeih

Name

Certification No **06-4078**
Expires on **10/18/2026**
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.