TUSTIN UNIFIED SCHOOL DISTRICT

BID NO. 386

Summer Maintenance 2026 Roof Replacements

Project: Contract No. 1 Peters Canyon Elementary School;
Contract No. 2 Columbus Tustin Middle School

Bid Deadline: February 19, 2026, at 2:00 PM

Submit Bids To: Tustin Unified School District
Attn: Project Bidding Administrator
1302 Service Road
Tustin, CA 92780

CONTRACT NO. 1 PETERS CANYON ELEMENTARY SCHOOL; CONTRACT NO. 2 COLUMBUS TUSTIN MIDDLE SCHOOL
BID NO. 386

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NOTICE INVITING BIDS

NOTICE IS HEREBY GIVEN that the Tustin Unified School District ("District") is seeking sealed bids from qualified, experienced, and licensed contractors for construction/installation of the following public project ("Project"): Bid No. 386 – Summer Maintenance 2026 Roof Replacements – Contract No. 1: Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

PLACE FOR SUBMITTING BIDS: Bids must be submitted to the District at the following location ("Place for Submitting Bids"): Tustin Unified School District, Attn: Project Bidding Administrator, 1302 Service Road, Tustin, CA 92780

BID DEADLINE: Bids must be received at the Place for Submitting Bids not later than **2:00 PM** on **February 19, 2026** ("Bid Deadline").

BID DOCUMENTS: The Bid Documents also may be downloaded, at no cost, from the following link on the District's website: https://www.tustin.k12.ca.us/departments/business-services/maintenance-operations-facilities/bids.

REQUIRED BID SECURITY: Each bid must be submitted with bid security as described in the Instructions for Bidders.

CONTRACTOR LICENSE: The class or classes of California contractor licenses required to bid on and perform the Work are: C-39.

PRE-BID CONFERENCE: The District will conduct a Pre-Bid Conference and Site Visit at **2:00 PM** on **February 4, 2026**. The conference initially will commence at Peters Canyon Elementary School, 26900 Peters Canyon Rd Tustin, CA 92782 (pre-bid conference will be held in front of the school, at the flagpole). Attendance at the Pre-Bid Conference and Site Visit is mandatory, and any bidder that does not attend shall be deemed non-responsive.

AWARD OF CONTRACT: The award of the Contract will be based on the following method of determining the lowest total bid amount: **Base Bid**

SURETY BONDS: As described in the General Provisions, the successful bidder must provide a Performance Bond and a separate Payment Bond, each in an amount equal to 100% of the total Contract Amount, and each issued by a California-admitted surety as defined in Code of Civil Procedure Section 995.120.

LABOR LAW: The Project is a "public work" that is subject to, among other laws, Labor Code Sections 1720 through 1861, inclusive. As described in the Instructions for Bidders, each contractor (including subcontractors) must be registered with the California Department of Industrial Relations ("DIR") in accordance with Labor Code Section 1725.5, and bidders must provide evidence of registration for themselves and their subcontractors. Each worker on the Project must be paid not less than the applicable prevailing rates of per-diem wages in the locality in which the Work is to be performed for each craft or type of worker needed to execute the Contract ("Prevailing Wages"). A copy of the applicable rates of Prevailing Wages is on file and available for review at the Place for Submitting Bids, and a copy will be posted at the Project Site. The Project is subject to compliance monitoring and

enforcement by the DIR. The successful bidder will be required to post all job-site notices required by DIR regulations and other applicable law.

RETENTION: Substitution of securities in lieu of Retention, pursuant to Public Contract Code Section 22300, will be permitted as provided in the General Provisions. As described in the Special Provisions, the District will withhold Retention in excess of five percent of each payment because the Project is substantially complex.

PUBLICATION DATES: January 28, 2026; February 4, 2026.

INSTRUCTIONS FOR BIDDERS

Caution: Read these Instructions for Bidders and other Bid Documents carefully. Do not assume that the documents are the same as similar documents you previously may have obtained from the District.

1. Architect. The architect of record, if any, for the Project ("Architect") is identified in the Special Provisions. The Architect may have prepared and/or approved graphic and pictorial illustrations in connection with the Project that show the design, location, and scope of certain portions of the Work and the Project, generally including plans, elevations, sections, details, schedules, and diagrams ("Plans"). The Architect also may have prepared and/or approved written requirements for materials, equipment, construction systems, quality, workmanship, services and other things to be furnished in connection with the Work and the Project ("Specifications"). If there is no Architect for the Project, the District may delegate to its staff and/or consultants any or all of the responsibilities specified in the Bid Documents as being the responsibility of the Architect.

2. Project Consultant. Notwithstanding that the District may intend to complete the Project using a single prime contractor, the District may contract for the services of a project manager, construction manager or other consultant in connection with the Project ("Project Consultant"). If the District has contracted with a Project Consultant prior to issuance of the Bid Documents, the Project Consultant is identified in the Special Provisions. Subject to its contract with the District, the Project Consultant will be the District's representative during the bidding, construction and close-out of the Work and will assist the District in the administration of the Contract.

3. Pre-Bid Conference and Site Visit. Prospective bidders in attendance at the Pre-Bid Conference and Site Visit (regardless of whether it is mandatory or optional) must be dressed appropriately and with safety in mind, including, at a minimum, by wearing: (i) closed-toe, closed-heel, and regular-heel shoes, such as athletic shoes (aka, sneakers) or work boots; (ii) long pants; and (iii) a shirt with sleeves. Open-toed shoes, open-heeled shoes, high-heeled shoes, short pants, dresses, and sleeveless shirts will not be permitted on the Project Site.

Regardless of whether the pre-bid conference initially commences at the District's main offices or at the Project Site, prospective bidders must not enter the Project Site unless and until a District representative is present and directs them to do so. Prospective bidders are responsible for their own transportation.

During the Pre-Bid Conference and Site Visit (regardless of whether it is mandatory or optional), each bidder must inspect the Project Site and become fully acquainted with the conditions in and under which the Work will be performed, so that the bidder fully understands the facilities, difficulties, restrictions and requirements attendant to the performance of the Work on and at the Project Site. The failure of a bidder to understand the conditions in and under which the Work is to be performed, or to examine and understand any other aspect of the Project Site that reasonably is susceptible to examination, shall not be deemed or construed to relieve the bidder from any obligations pursuant to its bid or the Contract Documents (defined in Section 2 of the Agreement for Construction Services).

If attendance at the Pre-Bid Conference and Site Visit is mandatory, then: (i) any representative of a prospective bidder who attends the Pre-Bid Conference and Site Visit must be sufficiently experienced and qualified for purposes of the "Certification Regarding Site Visit" form included in the Required Bid

Forms; and (ii) each bidder must complete and execute, and must submit with its bid, a copy of the Certification Regarding Site Visit.

EXCEPT FOR THE SCHEDULED PRE-BID CONFERENCE AND SITE VISIT CONDUCTED BY THE DISTRICT, PROSPECTIVE BIDDERS WILL BE NOT BE ALLOWED TO VISIT THE PROJECT SITE PRIOR TO THE BID DEADLINE. IN NO EVENT WILL THE DISTRICT CONDUCT OR PERMIT ANY SEPARATE OR ADDITIONAL CONFERENCE OR SITE VISIT FOR PROSPECTIVE BIDDERS THAT FAIL TO ATTEND THE SCHEDULED PRE-BID CONFERENCE AND SITE VISIT.

4. Examination of Contract Documents. Each prospective bidder must thoroughly examine and develop an understanding of all of the Contract Documents, including, without limitation, the Plans and Specifications, Agreement for Construction Services, General Provisions, Special Provisions, and required forms. Note that: (i) each capitalized term used, but not defined, in any particular Bid Document or Contract Document shall have the meaning as defined in one of the other Bid Documents or Contract Documents; or (ii) if any such capitalized term is not defined in any of the Bid Documents or Contract Documents, it shall be interpreted as having its commonly used or accepted meaning. The failure of a bidder to examine and understand any of the Bid Documents or Contract Documents, shall not be deemed or construed to relieve the bidder from any obligations pursuant to its bid or the Contract Documents.

5. Project is a Public Work. Except as otherwise provided or permitted by law, the Project is a "public work" and "public project" within the meaning of various provisions of the Public Contract Code, Labor Code, Civil Code, and other applicable legal requirements. Therefore, the performance of the Work shall be subject to such requirements. The Contract Documents include various provisions relating to public works and public projects as provided by law, and each bidder must thoroughly review and become familiar with the Contract Documents as described above in these Instructions for Bidders. However, the Contract Documents do not include comprehensive statements of all requirements of law applicable to public works and public projects, and each bidder shall be deemed and construed to have acknowledged that fact by submitting a bid for the Work. In addition, by submitting a bid for the Work, each bidder shall be deemed and construed to represent and warrant that it is familiar and knowledgeable with respect to all requirements of law applicable to public works and public projects generally and to the Work specifically.

DURING THE PRE-BID CONFERENCE AND SITE VISIT, IF THERE IS ONE, AND/OR DURING THE MANDATORY PRECONSTRUCTION CONFERENCE, THE DISTRICT MAY DISCUSS OR DESCRIBE LABOR-LAW REQUIREMENTS. HOWEVER, NO FAILURE BY THE DISTRICT TO DISCUSS OR DESCRIBE, OR TO FULLY OR ADEQUATELY DISCUSS OR DESCRIBE, SUCH REQUIREMENTS SHALL BE DEEMED OR CONSTRUED TO RELIEVE THE SUCCESSFUL BIDDER OR ANY OF ITS SUBCONTRACTORS FROM THE OBLIGATION TO STRICTLY COMPLY WITH ALL APPLICABLE LABOR-LAW REQUIREMENTS.

6. Requests for Clarification of Bid Documents. If a prospective bidder is in doubt as to the true meaning of any part of the Contract Documents, or finds any conflict, omission or other discrepancy in any Plans, Specifications or other Contract Documents, the bidder must submit a written request, using the "Bidder Clarification Request" form included in the Bid Documents, for an interpretation or correction of the Contract Documents in question. Bidder Clarification Requests must be submitted to the District not later than the "Bidder Clarification Request Deadline" specified in the Master Schedule. The District will attempt to, but does not guarantee that it will, respond to each Bidder Clarification Request that is submitted by the Bidder Clarification Request Deadline. A response

to a Bidder Clarification Request may be in the form of a clarification indicated on the applicable Bidder Clarification Request or an addendum to the Contract Documents, but each response will in any case be provided to all prospective bidders known to have obtained a copy of the Bid Documents from the District.

7. Modification of Bid Documents. Prior to the opening of bids, the Architect will issue interpretations or corrections of the Bid Documents only by addendum or addenda to the Contract Documents. A copy of each addendum will be mailed or otherwise delivered to each prospective bidder known by the District to have obtained a copy of the Bid Documents. Other prospective bidders shall be responsible for checking the District's website to determine whether any such addenda have been issued. Any bidder that fails to acknowledge receipt of each and all addenda in its Bid Proposal shall be deemed non-responsive.

8. Listing of Subcontractors. In accordance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 *et seq*.), each bidder must submit with its bid the names and locations of the places of business of each subcontractor that will perform any portion of the Work, or that, under subcontract to the bidder, will specially fabricate and install a portion of the Work, in an amount in excess of one-half of one percent of the total amount of the bidder's bid. A bidder may not list more than one subcontractor for any one portion of the Work. In each case that a bidder does not list a subcontractor for any portion of the Work, the bidder shall thereby be deemed and construed to represent that it is fully qualified to, and that it shall, perform such Work using its own forces. If the Bid Documents require the bidder to submit alternate bids and the bidder intends to use different or additional subcontractors for any of the alternates, the bidder must submit a separate, complete list of subcontractors for each such alternate. The lists of subcontractors must be set forth on the "Subcontractor Listing" form that is included in the Required Bid Forms.

9. Registration With DIR. No contractor may submit a bid for any work on a public works project unless the contractor is, and no subcontractor may be listed in any bid for work on a public works project unless the subcontractor is, currently registered with the California Department of Industrial Relations ("DIR") and qualified to perform public work pursuant to Labor Code Section 1725.5. In addition, no contractor or subcontractor may be awarded a contract for work on a public works project, or may perform any work on a public works project, unless the contractor or subcontractor is currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5. It is not a violation of Labor Code Section 1725.5 for an unregistered contractor to submit a bid authorized by Business and Professions Code Section 7029.1 or Public Contract Code Section 20103.5, if the contractor is registered at the time the contract is awarded. Each bidder must complete, execute, and submit with its bid the "Certification Regarding Contractor Registration" form included in the Required Bidding Forms. See Section 13.10 of the General Provisions for additional information regarding registration with the DIR.

10. DVBE Efforts. Bidders must comply with the requirements of this Section only if the Special Provisions require such compliance. The District has adopted a goal for DVBE participation in the Project by Disabled Veteran Business Enterprises ("DVBE") of three percent of the overall amount expended for certain new-construction and modernization projects each year. Each bidder must make and document its reasonable efforts to obtain DVBE participation in connection with the Work. In order to be considered reasonable efforts, a bidder's efforts should include advertising in appropriate publications and contacting any responding DVBE. Alternatively, if so specified in the Special Provisions, the District will advertise for DVBE contractors for the Work, and bidders must contact the District to

obtain information regarding any responding DVBE contractors. The bidder also should contact any DVBE contractors that the bidder knows and that could perform a portion of the Work or otherwise participate in the Contract. Each bidder must complete, execute and submit with its bid the "Certification Regarding DVBE Efforts" form included in the Required Bid Forms, and the District may reject as non-responsive any bid that does not comply with such requirement.

11. Non-Collusion Declaration. Each bidder must complete, execute and submit to the District, with its bid, a copy of the "Non-Collusion Declaration" form included in the Required Bid Forms.

12. List of Recent Projects. Each bidder must complete, execute and submit to the District, with its bid, the "Certification Regarding Recent Projects" included in the Required Bid Forms.

13. Installer Certification. Without limiting any bidders' responsibility to examine the Contract Documents as described above in these Instructions for Bidders, each bidder, prior to preparing and submitting its bid, must carefully review the technical specifications for the Project to determine whether there are any certification or other requirements applicable to manufacturers, suppliers, or installers of specific equipment, materials, or other specified items ("Certification Requirement"). In such event, each bidder must include, with its bid, such certification or other documentation as reasonable evidences compliance of the bid with the Certification Requirement. If the bid submitted by any bidder fails to reasonably document compliance with any applicable Certification Requirement, the District may reject the bid as non-responsive to the requirements of the Bid Documents.

14. Substitution of Specified Items.

14.1 Requests for Substitution. Except as may be specified in the Special Provisions with respect to Sole Source Items, the requirement for any material, equipment, process, item or other thing specified in the Bid Documents (each a "Specified Item") shall be interpreted as if followed by the words "or equal," and a bidder may offer in place of a Specified Item any material, product, service, or other thing that the bidder can demonstrate is, in every respect, materially equal to or better than the Specified Item and that will completely accomplish the intended aesthetics, purposes and/or functions of the Specified Item. Each substitution request is subject to and must conform with the requirements of the General Provisions, including, without limitation, requirements for submitting documentation in support of the request.

14.2 Timing for Submission of Requests for Substitution. **ANY AND EACH SUBSTITUTION REQUEST MUST BE SUBMITTED TO THE DISTRICT NOT LATER THAN SEVEN DAYS PRIOR TO THE BID DEADLINE SPECIFIED IN THE NOTICE INVITING BIDS.** The District will not consider any substitution request received thereafter, except to the extent provided in the General Provisions. Concurrently with submitting a substitution request, the bidder must provide all information required pursuant to the General Provisions to substantiate the request.

14.3 Approval of Requests for Substitution. The bidder shall be responsible for establishing that a proposed substitution of a Specified Item satisfies all requirements of the Contract Documents, including, without limitation, that the proposed substitute item is, in every respect, materially equal to or better than the Specified Item. The District may at any time request that a bidder provide any additional information regarding a substitute item that the bidder has proposed. The District, in consultation with the Architect, will decide whether to approve a substitution based on the information provided by the bidder and, in the District's sole discretion, on information obtained by the

District from other sources. The District has the sole discretion to determine whether a proposed substitute item is equal to or better than a Specified Item. Any request for substitution that is granted by the District shall be documented and processed by means of a Change Order after execution of the Contract. The District may condition its approval of any substitution upon delivery to the District of an extended warranty or other assurances of adequate performance of the substitute item. The District shall not be required to make a determination in regard to any substitution request and/or substantiating information prior to award of the Contract. If the District gives a Notice of Award to the Successful Bidder (defined below in these Instructions for Bidders), but subsequently disapproves a substitution proposed by the bidder, the bidder must provide the Specified Item in accordance with the Contract Documents and at no additional cost to the District.

14.4 Costs and Delays Arising from Substitution. The Successful Bidder, if it has requested any substitutions of Specified Items, shall be responsible for and shall bear any and all risks, expenses and costs of delay arising from required review or approval of the substitutions by the California Department of General Services, Division of State Architect ("DSA") and/or other governmental agency with competent jurisdiction.

15. Use of Bid Proposal Form is Mandatory. Each bid must be submitted on the "Bid Proposal" form included in the Required Bid Forms. Unless expressly permitted by the Bid Documents, a bidder must not: (i) make any changes, additions, or other modifications to the Bid Proposal form or other documents to be submitted with the Bid Proposal; (ii) restate or recharacterize the Work in the bid; or (iii) make any alternative proposals not permitted by the Bid Documents. The District may reject as non-responsive any bid that does not strictly comply with the foregoing.

16. Preparing the Bid. Bidders must fully and properly complete all information required to be included on the Bid Proposal form. A bid may contain an erasure, interlineation, or other correction only if the correction is made to the information entered by the bidder (not to the pre-printed text of the Bid Proposal form), does not result in any inconsistency or ambiguity, and is authenticated by affixing, in the margin immediately adjacent to the correction, the initials of the person or persons signing the bid. In the event of inconsistency between words and numbers, words shall govern over numbers and, for purposes of the bid, the District may rely on the words.

17. Bid Security. Each bid must be submitted with security in an amount equal to ten percent of the bidder's Base Bid Amount. For purposes of the Bid Documents, "Base Bid Amount" shall mean the total of a bidder's bid without considering or including (1) any bid alternates specified in the bidder's completed Bid Proposal form, or (2) the amount of any specified Unforeseen Cost Allowance. In the event a bidder's bid security does not equal at least ten percent of the Base Bid Amount, the District may reject that bid as non-responsive. The bid security must be in one of the following forms: (i) a cashier's or certified check payable to the District; or (ii) a bid bond. Personal and business checks are not acceptable as bid security. If the bidder desires to submit bid security in the form of a bid bond, it must be an executed copy of the "Bid Bond" form included as one of the Required Bid Forms (without any interlineations or other modifications) and must be issued by a California-admitted surety as defined in Code of Civil Procedure Section 995.120. Unless forfeited, the District will return security to the bidders within a reasonable time, but not later than sixty days after the District Board has awarded the Contract for the Work.

18. Signing the Bid and Other Required Documents. Each of the Bid Proposal form and other Required Bid Forms, the Bid Bond, and all other documents to be submitted with the bid that

require an original signature of the bidder must be signed in permanent ink, by a person duly authorized to sign documents and contractually bind the bidder. The District may reject, as non-responsive, any Bid Proposal form or other document that is to be signed by the bidder, if the bidder signs using a stamped or mechanically printed signature, or if the bidder signs using DocuSign, Adobe Sign, or similar technology.

19. Sealing and Labeling the Bid. The completed Bid Proposal form, other Required Bid Forms, and all additional documents and other materials to be submitted with the bid must be enclosed in a sealed envelope. Each bidder must fill in all required information on a copy of the "Bid Label" form included in the Required Bidding Forms, and must securely fastened the completed Bid Label to the outside of the bid envelope. No other information must be apparent on the outside of the bid envelope, and the District may reject, as non-responsive, any bid if the outside of the bid envelope is not properly labeled or shows extraneous information or marks.

20. Extensions to Bid Deadline. For purposes of the Notice Inviting Bids and these Instructions for Bidders, any reference to the "Bid Deadline" shall mean the date and time specified as the Bid Deadline in the Notice Inviting Bids and any authorized extension(s) thereto. The Bid Deadline shall be extended by no less than seventy-two hours if the District issues any material changes, additions, or deletions to the Bid Documents within seventy-two hours of the Bid Deadline.

21. District Receipt of Bids. The District must receive any and all bids prior to the Bid Deadline and at the Place for Submitting Bids described in the Notice Inviting Bids. The clock, computer or other device located at the Place for Submitting Bids and designated as the official bid clock shall be used in determining whether bids have been timely received by the District, regardless of whether the time shown on the official bid clock is precisely accurate. Each bidder is solely responsible for ensuring that its bid is timely received by the District. A bidder must submit its bid to the District via personal or other delivery. The District will not accept any oral bid or bid sent via facsimile or electronic transmission. At no time will District telephones or facsimile machines be available for use by bidders. Each bid received by the District after the Bid Deadline will be returned to the bidder unopened.

22. Modifying or Superseding a Bid. Not later than the Bid Deadline, a bidder may modify or supersede its original bid by withdrawing its original bid as provided in these Instructions for Bidders and concurrently submitting a replacement bid for the Work in accordance with the Bid Documents. The District shall reject any replacement bid that is not received by the District prior to the Bid Deadline. The late receipt and rejection of a bidder's replacement bid shall not be deemed or construed to constitute a withdrawal of the original bid by the bidder, and the District still may accept the original bid if responsive and the bidder is a responsible contractor. Each replacement bid received by the District after the Bid Deadline will be returned to the bidder unopened.

23. Withdrawing a Bid. A bidder may withdraw its bid at any time prior to the Bid Deadline by submitting a written request to the District via personal or other delivery. The District will not accept any oral withdrawal request or any withdrawal request sent via facsimile or electronic transmission. A withdrawal request must be signed by an authorized representative of the bidder. A withdrawal request received by the District after the Bid Deadline shall in no event be deemed or construed to constitute a withdrawal of the bid, and the District still may accept the bid if it is responsive and the bidder is a responsible contractor. After receipt of a timely withdrawal request, the District shall return the bidder's bid security upon request. Except as provided in Public Contract Code Section 5100 *et seq*., if a

bidder has not withdrawn its bid prior to the Bid Deadline, the bidder thereafter may not withdraw its bid for a period of sixty days after the Bid Deadline.

24. Bid Irregularities. The District, in accordance with applicable law, may waive any minor irregularity or informality in any bid or in the bidding process. The District may, but is not required to, seek information from any bidder that might resolve an ambiguity in the bidder's bid.

25. Bid Protests. Any bidder that has duly submitted a bid for the Work may protest the process used to seek bids for the Work, another bid for the Work and/or the intended award of the Contract for the Work only by filing a written protest with the District in accordance with the procedures set forth in this Section (each a "Bid Protest"). The District will not accept or consider any Bid Protest delivered orally (e.g., by telephone or face-to-face discussion) or electronically (e.g., by email). Notwithstanding the foregoing, a Bid Protest may be delivered via email if an identical "hard copy" of the Bid Protest is delivered via U.S. Mail or overnight delivery, and, in such event: (i) the bidder shall be solely responsible for ensuring that it has the correct email address of the District's Project Bidding Administrator; and (ii) the date the delivery of the hard copy occurs (not the date the email is received) shall be used in determining whether the Bid Protest has been timely submitted to the District. In order for a Bid Protest to be valid and be considered by the District, the Bid Protest:

(i) Must be received by the District not later than 4:00 p.m. on the fourth business day following the opening of bids;

(ii) Must clearly identify the bidder that is filing the Bid Protest, together with the name, address and telephone number of the person representing the bidder for purposes of the Bid Protest;

(iii) Must clearly identify the specific bid, bidding process, or other matter that is the subject of the Bid Protest;

(iv) Must clearly identify the specific provisions of all documents that are relevant to the Bid Protest;

(v) Must clearly identify and describe in detail the specific basis or bases for the Bid Protest and all facts relevant thereto;

(vi) Must clearly identify and describe in detail all arguments by the protesting bidder in support of the Bid Protest, including, without limitation, citations to applicable statutory requirements; and

(vii) Must be submitted with all documentation the protesting bidder desires to submit that is relevant to and supports the basis or bases underlying the Bid Protest.

If a Bid Protest does not comply with each and all of the foregoing requirements (provided that a protesting bidder will be deemed to have submitted all documentation that it desires in accordance with clause (vii) of the foregoing), the District will reject the Bid Protest as invalid. However, upon receipt of a valid Bid Protest, the District and/or its legal counsel will review the Bid Protest and provide a written response to the protesting bidder setting forth a recommendation for action by the Board of Education of the Tustin Unified School District ("District Board") in response to the Bid Protest. Action by the District Board in response to a timely submitted Bid Protest shall be a condition precedent to the filing of any claim or demand and to the initiation of any action (legal or equitable) or other proceeding arising from the matter(s) protested.

COMPLIANCE WITH THE FOREGOING BID PROTEST REQUIREMENTS IS MANDATORY. EACH BIDDER THAT DESIRES TO PROTEST MUST FILE ITS OWN BID PROTEST IN ACCORDANCE WITH THE FOREGOING REQUIREMENTS, AND NO BIDDER MAY RELY ON A BID PROTEST BY ANOTHER BIDDER AS A MEANS OF SATISFYING SUCH REQUIREMENTS. COMPLIANCE WITH THE FOREGOING REQUIREMENTS IS THE SOLE AND EXCLUSIVE MEANS OF PROTESTING A BID, THE BIDDING PROCESS AND/OR THE INTENDED AWARD OF THE CONTRACT, AND FAILURE TO SO COMPLY SHALL BE DEEMED AND CONSTRUED AS A WAIVER OF ANY AND ALL RIGHTS THE BIDDER MAY HAVE TO PURSUE A CLAIM, DEMAND, OR ACTION ARISING FROM ANY SUCH MATTER.

26. Post-Bid Questionnaire-Interview. Prior to award of the Contract, the apparent low bidder must complete a questionnaire and/or participate in an interview with District staff and/or consultants scheduled by the District to occur during normal business hours. The post-bid questionnaire-interview requirement is mandatory. If the apparent low bidder does not timely complete and provide the questionnaire to the District or does not in good faith participate in the scheduled interview, then: (i) the apparent low bidder shall forfeit the bid security submitted with its bid; (ii) the questionnaire-interview requirement shall be applicable to, and District may award the Contract to, one of the other responsible and responsive bidders, or the District may release all bidders.

27. District Award of Contract. The District Board, in its sole discretion, may reject all bids. If the District Board awards the Contract, the award will be to the responsible bidder with the lowest responsive bid from among all responsible and responsive bidders ("Successful Bidder"). If two or more responsive and responsible bidders have submitted the same low bid, the District shall determine the Successful Bidder by means of a coin toss or some other random method. The District will issue notice of the award of the Contract to the Successful Bidder ("Notice of Award").

28. Successful Bidder Execution of Contract. **WITHIN FIVE BUSINESS DAYS AFTER RECEIPT OF THE NOTICE OF AWARD, OR WITHIN SUCH OTHER PERIOD AS THE DISTRICT IN ITS SOLE AND ABSOLUTE DISCRETION MAY AGREE (in either case, the "Contract Return Period"), THE SUCCESSFUL BIDDER SHALL COMPLETE AND SIGN AS APPLICABLE, AND SHALL DELIVER TO THE DISTRICT, THE AGREEMENT FOR CONSTRUCTION SERVICES AND ALL BONDS, OTHER REQUIRED CONTRACT FORMS, CERTIFICATES OF INSURANCE, AND OTHER DOCUMENTS AS REQUIRED BY THE CONTRACT DOCUMENTS (collectively, the "Contract Documentation").** For purposes of the foregoing, the District In its sole and absolute discretion, and only in writing, may provide additional time for the Successful Bidder to deliver some or all of the executed Contract Documentation to the District. The Contract shall not be deemed or construed to have been fully executed and delivered by the Successful Bidder unless and until the Successful Bidder has delivered, to the District, all of the executed Contract Documentation without exception. If the Successful Bidder fails to deliver, to the District, all Contract Documentation within the applicable Contract Return Period, then: (i) the Successful Bidder shall forfeit the bid security submitted with its bid; and (ii) as authorized by Public Contract Code Section 5106, the District may award the Contract to one of the other responsible and responsive bidders, or may release all bidders.

29*. *Current Form W-9. The Successful Bidder shall complete, sign and submit with its Contract Documentation, a current Department of Treasury, Internal Revenue Service, Form W-9 (Request for Taxpayer Identification Number and Certification).

30. Time for Completion of Work and Liquidated Damages. The Successful Bidder must complete the Work in accordance with the Contract Documents and within the time period specified in

the Master Schedule ("Contract Time"), as the Contract Time may be adjusted in accordance with the Contract Documents. The failure of the Successful Bidder to fully and satisfactorily complete the Work within the Contract Time may result in the District assessing Liquidated Damages as provided in the General Provisions.

31. Subcontractor Eligibility and Licensing. The Successful Bidder shall in no event permit a subcontractor to perform any of the Work if that subcontractor is ineligible to work on a public work or public project. Each subcontractor that the Successful Bidder intends shall perform any portion of the Work must be licensed in accordance with law by the California Contractors State License Board ("CSLB") prior to commencing its portion of the Work.

32. Prevailing Wages and Labor-Law Compliance Monitoring. The Successful Bidder and each of its subcontractors (regardless of tier) shall pay not less than the applicable Prevailing Wages for each craft or type of worker needed to execute the Contract. A copy of the per-diem rates of Prevailing Wages applicable to the Work is on file with the District and is available for review at the location specified in the Notice Inviting Bids as the Place for Submitting Bids, and a copy will be posted at the Project Site. The Work will be subject to monitoring by the DIR as to compliance with labor-law requirements, as described in more detail in the General Provisions.

33. Fingerprinting and Employee Background Checks. If so specified in the Special Provisions, the Successful Bidder, prior to entering in or upon the Project Site for purposes of commencing the Work, must comply with the requirements for employee background checks set forth in Section 3.7 of the General Provisions. If the Special Provisions do not initially mandate compliance with such requirements, the District may subsequently alter such determination in appropriate circumstances, including, without limitation, in any case that performance of any Work will occur after the initially specified Contract Time. The District may impose other requirements designed to protect students regardless of whether it requires such employee background checks. The Successful Bidder shall be responsible for compliance with any and all such requirements with respect to its own employees and the employees of its subcontractors.

34. Discrimination Prohibited. In connection with performance of the Work, neither the Successful Bidder nor any of its subcontractors of any tier shall illegally discriminate against any prospective or existing employee in violation of applicable law. The Successful Bidder must comply with applicable federal and California laws prohibiting such discrimination and must require like compliance by any and all subcontractors performing any of the Work.

35. Electronic Bidding and/or Video-Conference Bid Opening. If the District establishes a process for bidders to submit bids electronically: (i) the District shall liberally interpret the foregoing Instructions for Bidders to effectuate their intended purposes; (ii) documents that require an original signature on behalf of the bidder may be scanned and submitted electronically; (iii) bids may be withdrawn or superseded electronically; and (iv) the bidding process otherwise shall conform to instructions provided by the District. Regardless of whether the District implements an electronic bidding process, the District may open bids at any time subsequent to the Bid Deadline and may require that interested bidders view the bid opening through video conferencing, rather than being physically present for the bid opening.

DESCRIPTION OF WORK

A. The Work consists of any and all labor, materials, goods, supplies, equipment, tools, utilities, temporary facilities, transportation, delivery services, and other services and things of any nature whatsoever as are expressly and impliedly necessary to fully and satisfactorily complete the Project: (i) in strict accordance with the Contract Documents; and (ii) within the Contract Time an not later than the Required Completion Date specified in the Master Schedule. The Work consists generally of the following:

B. The Project Site Contract No. 1:

Peters Canyon Elementary School
26900 Peters Canyon Rd.
Tustin, CA 92782

Buildings: MPR, 400 Wing, 300 Wing, 200 Wing, 100 Wing & Canopy

Buildings: MPR, 400 Wing, 300 Wing, 200 Wing, 100 Wing: (Red)

1. Complete tear-off and installation of new roof system. See spec.

Canopy: (Green)

2. Complete demo of canopy system. See spec.

C. The Project Site Contract No. 2:

Columbus Tustin Middle School
17952 Beneta Way,
Tustin, CA 92780

Buildings: G, I, J & Activity Center

Buildings: G, I, J: (Red)

3. Complete tear-off and installation of new roof system. See spec.
4. Please include replacement of (3) three roof receptors, like for like, at locations determined by District.

Activity Center: (Green)

5. Recover System Activity Center Building. See spec.
6. Remove and Reinstall New Edge Metal. See spec (Orange).

MASTER SCHEDULE

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Some or all of the dates and times set forth in this Master Schedule are anticipated dates and times as of the date the Project Owner identified above (herein, the "District") issued the Notice Inviting Bids for the Project and are subject to change prior to award of the Contract. The Contractor must coordinate the schedule for completion of the Work with the District to ensure that the Work will not unreasonably interfere with District operations, and, to that end, the District may require that Contractor perform the Work during non-school hours, on weekends and/or during school holidays and other breaks; provided that the District and the Contractor shall endeavor to schedule reasonable blocks of time for performance of the Work as will be cost-efficient for the Contractor.

	DATE	**TIME**
Advertisement	January 28, 2026 February 4, 2026	N/A
Bid Documents Available	February 4, 2026	N/A
Pre-Bid Conference and Site Visit	February 4, 2026	2:00 PM
Bidder Clarification Request Deadline	February 12, 2026	2:00 PM
Deadline for Final Addendum	February 13, 2026	2:00 PM
Bid Opening	February 19, 2026	2:00 PM
Award of Contract	March 9, 2026	N/A
Notice of Award	March 10, 2026	N/A
Last Day for District to File DIR Form PWC-100	TBD	N/A
Notice to Proceed	March 20, 2026	N/A
Mandatory Preconstruction Conference	TBD	TBD
Work to Commence*	June 1, 2026	N/A
Required Completion Date	August 3, 2026	5:00 PM

*Not less than seven days following the date of the Notice of Award

BIDDER CLARIFICATION REQUEST

Project Owner: Tustin Unified School District

Project: (CIRCLE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

Identify issue (including, as applicable, drawing/specification number): _____

_____

_____

_____

Clarification requested: _____

_____

_____

_____

Print Name: _____ Signature: _____ Date: _____

(Note: Architect and/or District to complete the portion of this form below.)

Date Request Received: _____ Response No.: _____

Response to request for clarification: _____

_____

_____

_____

_____

_____

Clarification issued by:

Architect:	District Acknowledgement:
_____	_____
Name	Name
_____	_____
Signature	Signature
_____	_____

CHECKLIST

DOCUMENTS REQUIRED TO BE INCLUDED IN BID

Each and all of the documents listed below in this checklist must be included as part of the bid for the Project. All of such documents must be completed, signed (as applicable), and submitted to the District at the same time, prior to the Bid Deadline. A failure by a bidder to fully complete, sign (as applicable), and/or submit any of the documents listed below may render its bid non-responsive to the Bid Documents. This checklist is intended solely for reference and use by bidders as a convenience, and it is not necessary to submit this checklist to the District. The Bid Documents may require that a bidder submit additional documentation with its bid; therefore, notwithstanding that the District has provided this checklist, each bidder shall be responsible for carefully reviewing the Bid Documents (including, without limitation, the Special Provisions and any Addenda issued by the District after initial issuance of the Bid Documents) to determine applicable bidding requirements.

- ❑ Bid Label
- ❑ Bid Proposal
- ❑ Subcontractor Listing, with attachment sheet(s) – **Complete one form for each contract on which you are bidding**
- ❑ Bid Bond (with notary and power of attorney attachments), or certified or cashier's check – **Provide a Bid Bon for each contract on which you are bidding**
- ❑ Certification Regarding DVBE Efforts, with attachment sheet(s) – **Not Required**
- ❑ Non-Collusion Declaration
- ❑ Certification Regarding Recent Projects
- ❑ Certification Regarding Site Visit (If applicable – see Instructions for Bidders)
- ❑ Certification Regarding Contractor Registration
- ❑ Notice and Certification Regarding Russia-Related Sanctions
- ❑ Notice and Certification Regarding In-Use Off-Road Diesel-Fueled Fleets Regulation
- ❑ Fleet List and associated Certificates Of Reported Compliance (see Notice and Certification Regarding In-Use Off-Road Diesel-Fueled Fleets Regulation)

CHECKLIST

DOCUMENTS REQUIRED FOLLOWING AWARD OF CONTRACT

Following receipt of a Notice of Award, and within the time specified by the Bid Documents, the Successful Bidder must have completed, signed (as applicable), and submitted to the District each and all of the documents listed below in this checklist. A failure the Successful Bidder to fully complete, sign (as applicable), and/or submit any of the documents listed below, within the time(s) required by the Bid Documents, may result in the District electing to rescind the award, the Successful Bidder forfeiting its bid security, and the District awarding the Contract to another bidder as authorized by Public Contract Code Section 5106. This checklist is intended solely for reference and use by the Successful Bidder as a convenience, and it is not necessary to submit this checklist to the District. The Bid Documents may require that the Successful Bidder submit additional documentation following award of the Contract; therefore, notwithstanding that the District has provided this checklist, the Successful Bidder shall be responsible for carefully reviewing the Bid Documents (including, without limitation, the Special Provisions, insurance requirements, and any Addenda issued by the District after initial issuance of the Bid Documents) to determine applicable contracting requirements.

- ❑ Agreement for Construction Services
- ❑ Certification Regarding Employee Background Checks, with attachment sheet(s)
- ❑ Certification Regarding Drug-Free Workplace
- ❑ Certification Regarding Tobacco-Free Workplace
- ❑ Certification Regarding Workers Compensation
- ❑ Notice and Certification Regarding Lead-Free Materials
- ❑ Certification Regarding Asbestos
- ❑ Payment Bond, with notary and power of attorney attachments, and with surety qualification documentation (see Section 11.3 of the General Provisions) – **Complete one form for each contract you are awarded**
- ❑ Performance Bond, with notary and power of attorney attachments, and with surety qualification documentation (see Section 11.3 of the General Provisions) - **Complete one form for each contract you are awarded**
- ❑ Certification Regarding DVBE Participation, with attachment sheet(s) – **Not Required**
- ❑ Certificate(s) of Insurance
- ❑ Form W-9 (Not included – the Successful Bidder must itself obtain a current copy of Form W-9)

REQUIRED BID FORMS

The District shall deem to be non-responsive each bidder that fails to complete, duly execute, and submit the following forms with its bid:

1. Bid Label

2. Bid Proposal

3. Subcontractor Listing - **Complete one form for each contract on which you are bidding**

4. Bid Bond - **Provide a Bid Bon for each contract on which you are bidding**

5. Certification Regarding DVBE Efforts – **Not Required**

6. Non-Collusion Declaration

7. Certification Regarding Recent Projects

8. Certification Regarding Site Visit

9. Certification Regarding Contractor Registration

10. Notice and Certification Regarding Russia-Related Sanctions

11. Notice and Certification Regarding the In-Use Off-Road Diesel-Fueled Fleets Regulation

BID LABEL

THIS ENVELOPE CONTAINS A BID FOR THE PROJECT IDENTIFIED BELOW.

Project Name: Summer Maintenance 2026 Roof Replacement –
Contract No. 1 Peters Canyon Elementary School
Contract No. 2 Columbus Tustin Middle School

Bid Number: 386

Bid Deadline: February 19, 2026 @ 2:00 PM

Location for Submittal of Bids: Tustin Unified School District
Attn: Project Bidding Administrator
1302 Service Road
Tustin, CA 92780

Bidder Company Name: _____

Bidder Company Address: _____

_____

_____

Bidder Contact Person Name: _____

Contact Person Title: _____

Contact Person Telephone No.: _____

Contact Person Email Address: _____

(Space below for District date/time stamp only.)

Each bidder must fill in the required information on this Bid Label, cut on the dashed line above, and glue, tape, or otherwise securely fasten the completed Bid Label to the outside of the sealed envelope containing the bidder's bid.

BID PROPOSAL

(Do not leave any information blank)

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

A. The undersigned is a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, has reviewed the information set forth in this Bid Proposal form and the Bid Documents, and has executed and submitted this Bid Proposal on behalf of the Bidder.

B. The Bidder is duly licensed as a contractor by the CSLB, such license is in full force and effect as of the date the Bidder has submitted this bid to the District, and the classification(s) of such license is appropriate to allow the Bidder and any listed subcontractor(s) to perform all of the Work in accordance with California law. The number and classification(s) of the CSLB license issued to the Bidder are:

License No. _____ Classification(s): _____

C. The Bidder has become familiar with the Project Site as certified in the Certification Regarding Site Visit submitted concurrently herewith, has become familiar with the Contract Documents, and hereby represents and warrants that it is sufficiently experienced and qualified, and that it has sufficient financial and other resources, to perform and complete the Work in strict accordance with the Contract Documents.

D. Base Bid: The Bidder hereby proposes to (and, if awarded the Contract, the Bidder shall) furnish at its own cost and expense any and all labor, materials, tools, equipment, facilities, transportation, services and other things required for completion of the Work in strict conformity with the Bid Documents, in exchange for payment of the following all-inclusive amount:

Contract No. 1 Peters Canyon Elementary School

_____

Dollars ($ _____).

E. Unforeseen Cost Allowance: The Bidder acknowledges and agrees that an Unforeseen Cost Allowance, as described in Part 7 of the General Provisions, in the amount of $75,000, shall be added to the Base Bid amount specified in Paragraph D, above, such that the Contract Price shall equal the total of such Base Bid amount and Unforeseen Cost Allowance amount, plus any the amounts attributable to Alternates that the District elects to include in the scope of the Work.

_____

Dollars ($ _____).

E. Unforeseen Cost Allowance: The Bidder acknowledges and agrees that an Unforeseen Cost Allowance, as described in Part 7 of the General Provisions, in the amount of $25,000, shall be added to the Base Bid amount specified in Paragraph D, above, such that the Contract Price shall equal the total of such Base Bid amount and Unforeseen Cost Allowance amount, plus any the amounts attributable to Alternates that the District elects to include in the scope of the Work.

F. The Bidder acknowledges that it received, and that it fully considered when preparing this bid and determining the bid amount(s) proposed by the Bidder herein ("Bid Amounts"), each of the following Addenda to the Bid Documents (check all that apply; note, this Bid Proposal may be rejected as non-responsive if the Bidder checks any addendum that the District or Architect did not actually issue):

Contract No. 1 Peters Canyon Elementary School

☐ Addendum No. 1	☐ Addendum No. 2	☐ Addendum No. 3	☐ Addendum No. 4
☐ Addendum No. 5	☐ Addendum No. 6	☐ Addendum No. 7	☐ Addendum No. 8

Contract No. 2 Columbus Tustin Middle School

☐ Addendum No. 1	☐ Addendum No. 2	☐ Addendum No. 3	☐ Addendum No. 4
☐ Addendum No. 5	☐ Addendum No. 6	☐ Addendum No. 7	☐ Addendum No. 8

G. The Bidder acknowledges that, except as expressly provided by the Contract Documents, the Bid Amounts shall constitute all-inclusive compensation in exchange for full and satisfactory completion of all of the Work, including, without limitation, compensation for any and all supervision, coordination, scheduling, estimating, general conditions, sales and other taxes, fees, field-office and home-office overhead, and profit.

H. The Bidder represents and warrants that it was responsible for preparing this bid and that it has carefully checked and confirmed the Bid Amounts and all other information set forth in this Bid Proposal. The Bidder acknowledges and agrees that the District may rely on such information and in no event shall the District Board or the District be responsible for any errors or omissions in this bid. The Bidder is aware and acknowledges that the District Board has the right to waive any minor irregularity in this bid, any other bid, or all bids for the Project.

I. The Bidder has completed as applicable, executed, and submitted with this Bid Proposal all of the other Required Bid Forms. The Bidder acknowledges that the District shall deem this bid to be non-responsive if the Bidder fails to complete as applicable, execute, and submit any such other forms to the District concurrently with submitting this Bid Proposal.

J. If awarded the Contract, the Bidder shall execute the Contract by causing its duly authorized representative to sign the Agreement for Construction Services, and thereby bind the Bidder to the Contract. The Bidder acknowledges that its bid security submitted concurrently herewith was given to guarantee that, if awarded the Contract, the Bidder shall, prior to expiration of the Contract Return Period, complete, sign as applicable, and submit to the District: (i) the Agreement for Construction Services, Payment Bond, Performance Bond, and all other Required Contract

Forms; (ii) all Certificates of Insurance and endorsements required by the Contract Documents; and (iii) all other documentation required by the Contract Documents. The Bidder further acknowledges that it shall forfeit up to the whole amount of its bid security in the event Bidder fails to timely complete, sign as applicable, and submit any of those documents to the District.

K. The Bidder acknowledges and agrees that, if awarded the Contract, the Bidder shall be solely responsible for timely procuring and otherwise obtaining all labor, materials, supplies, and other things necessary to timely perform the Work in strict accordance with the Contract Documents, and neither the Contract Amount nor the Contract Time shall be increased as the result of increases in prices or delays that occur subsequent to the Bid Deadline, regardless of the cause of any such price increases or delays.

L. The Bidder is, and if awarded the Contract, then at all times during the performance of Work must remain, in full compliance with the Immigration Reform and Control Act of 1986 ("IRCA") relating to its employees, and the Bidder shall indemnify, hold harmless and defend the District with respect to any and all claims, actions, other proceedings, penalties, costs and expenses (including, without limitation, attorneys' fees), and other liabilities of any nature whatsoever that arise out of the Bidder's failure to strictly comply with the IRCA.

M. The contact information set forth below is the current physical street address, telephone number, and email address for the Bidder. The Bidder acknowledges that, if the District attempts to contact the Bidder for any purpose relating to this bid (including, without limitation, to request additional information or to provide a Notice of Award), but the District is unable to reach the Bidder because information set forth below is not correct, then the District may reject this bid and, in such event, the District shall have no liability to the Bidder whatsoever.

Street Address: _____

_____

_____

Telephone Number: _____

Email Address: _____

N. The Bidder is organized as a (check only one):

☐ Corporation ☐ Limited Liability Company ☐ General Partnership

☐ Sole Proprietorship ☐ Other (describe): _____

O. The Bidder is organized pursuant to the laws of the State of: _____

P. The Bidder acknowledges and agrees that, unless it withdraws this bid in accordance with the Instructions for Bidders prior to the Bid Deadline, the Bidder may not withdraw this bid for a period of sixty days after the Bid Deadline.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

SUBCONTRACTOR LISTING

Project Owner: Tustin Unified School District

Project: (CIRCLE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, has executed this certification on behalf of the Bidder.

(ii) The Bidder knows and understands the provisions of the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 *et seq*.), including, without limitation, the consequences of not listing any subcontractor, or listing more than one subcontractor, for any portion of the work on the Project.

(iii) The Bidder is aware and acknowledges that, if bid alternates are required, and the Bidder intends to use different or additional subcontractors for any of the bid alternates, the Bidder must submit a separate, complete list of subcontractors for each such bid alternate.

(iv) All subcontractors that the Bidder will use, if awarded a contract for work on the Project, are listed on the following Attachment Sheet(s), and the Bidder represents and warrants that each such subcontractor shall be duly and appropriately licensed by the CSLB prior to the subcontractor commencing any of the Work.

(v) The Bidder is aware and acknowledges that, not later than twenty-four hours following the bid deadline, the Bidder must submit to the District, in writing, the address, telephone number, and contact person's first and last name, for each listed subcontractor.

(vi) The Bidder is aware and acknowledges that, if awarded a contract for work on the Project, the Bidder shall not, without the District's written consent: (a) substitute any subcontractor in place of a listed subcontractor; (b) permit any subcontract for work on the Project to be assigned or transferred; (c) allow any such work, labor, or service to be performed by anyone other than the applicable listed subcontractor; or (d) sublet or subcontract any of the work in excess of one-half of one percent of Bidder's total bid for which the Bidder did not list a subcontractor.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: THIS CERTIFICATION PAGE MUST BE ACCOMPANIED BY THE LIST OF SUBCONTRACTORS ON THE FOLLOWING ATTACHMENT SHEET. MAKE AND USE COPIES OF THE ATTACHMENT SHEET, AS NECESSARY TO LIST ADDITIONAL SUBCONTRACTORS.

SUBCONTRACTOR LISTING
ATTACHMENT SHEET

Project Owner: Tustin Unified School District

Project: (CIRLCE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

Attachment Sheet _____ of _____

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1. Subcontractor Name: _____

   CSLB License No.: _____ DIR Registration No.: _____

   Location of Business: _____

   Portion of Work: _____

2. Subcontractor Name: _____

   CSLB License No.: _____ DIR Registration No.: _____

   Location of Business: _____

   Portion of Work: _____

3. Subcontractor Name: _____

   CSLB License No.: _____ DIR Registration No.: _____

   Location of Business: _____

   Portion of Work: _____

4. Subcontractor Name: _____

   CSLB License No.: _____ DIR Registration No.: _____

   Location of Business: _____

   Portion of Work: _____

5. Subcontractor Name: _____

   CSLB License No.: _____ DIR Registration No.: _____

   Location of Business: _____

   Portion of Work: _____

BID BOND

Project Owner: Tustin Unified School District of Orange County, California

Project: (CIRCLE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name (insert full legal name)**:** _____

Surety (insert full legal name)**:** _____

Bond Number: _____

Penal Sum: Ten percent (10%) of Total Bid Amount

The Contractor identified above (herein, the "Principal") has provided this bid bond in connection with the bid submitted by the Principal to the Project Owner identified above (herein, the "School District") for the construction of the Project identified above, which is a public project and a public work in accordance with California law.

By issuing this bid bond, the Surety (identified above) shall be deemed and construed to thereby certify to the School District that the Surety is "an admitted surety insurer" as defined in California Code of Civil Procedure Section 995.120.

We, the Principal and the Surety, as evidenced by the signatures of our respective duly authorized representatives set forth below, are hereby held and firmly bound unto the School District in the amount of the Penal Sum specified above, for the payment of which amount, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns as specified below.

The payment obligation described above shall become null and void if: (i) the School District awards the contract for construction of the Project ("Contract") to the Principal based on the bid described above and, within the required number of days after the notice of such award, the Principal enters into the Contract and provides to the School District the required payment and performance bonds, and all other required documentation; (ii) the School District rejects all bids received for the Project; or (iii) the Principal withdraws its bid following expiration of the time period during which bids may not be withdrawn.

If, however, the School District awards the Contract to the Principal, but the Principal fails and/or refuses to enter into the Contract and/or to properly and duly execute and deliver the required payment bond, performance bond, and/or other required documentation, then, immediately upon request of the School District and without imposing any additional conditions on payment whatsoever, the Surety and/or the Principal shall forfeit and pay to the School District such amount as the School District states is the total of the costs reasonably incurred by the School District as a result of such failure or refusal by the Principal, including, without limitation, the difference between the Principal's bid and the bid for the Project subsequently accepted by the School District, rebidding of the Project if necessary, and administrative, publication, and other costs incurred by the School District. In no event, however, shall the liability pursuant to this bid bond exceed the Penal Sum specified above.

The Surety, for value received, hereby stipulates and agrees that this bid bond and the Surety's obligations hereunder shall be and remain in effect until such time as one or more of the conditions described herein for rendering this bid bond null and void have been satisfied. The Surety, for value received, further stipulates and agrees that this bid bond shall in no way be impaired or otherwise affected by any extension of the time within which the School District may accept the Principal's bid for the Project or of the time within which the Principal must enter into the Contract and submit the required documentation, and Surety hereby waives any requirement for notice of any such extension.

The Surety shall not be deemed to have fully and appropriately executed this Bid Bond unless Surety has provided all of the following information:

SURETY'S SOUTHERN CALIFORNIA/LOCAL REPRESENTATIVE	**SURETY'S REPRESENTATIVE FOR FILING CLAIMS**
_____	_____
Company Name	Company Name
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code
_____	_____
Representative Name	Representative Name
_____	_____
Representative Telephone Number	Representative Telephone Number
_____	_____
Representative Email Address	Representative Email Address

(The remainder of this page intentionally left blank.)

Each person who has signed this Bid Bond on behalf of either the Principal or the Surety shall be deemed and construed to thereby represent and warrant that the he, she, or they has been duly authorized by such party to sign, and thereby bind such party to, this Bid Bond.

IN WITNESS WHEREOF, each of the Principal and Surety, intending to be bound, has executed this Bid Bond as evidenced by the signatures, below, of their respective, duly authorized representatives, and has imprinted its corporate seal, if any, where indicated below.

PRINCIPAL	**SURETY**
_____	_____
Company Name	Company Name
_____	_____
Representative Signature	Representative Signature
_____	_____
Representative Name	Representative Name
_____	_____
Representative Title	Representative Title
_____	_____
Date Signed	Date Signed
<u>Principal</u>: Attach Notary acknowledgment to this Bid Bond and imprint corporate seal, if any, in the space below this line.	**<u>Surety</u>: Attach Notary acknowledgment and power of attorney to this Bid Bond and imprint corporate seal in the space below this line or attach separate sheet with seal.**

(*The following is to be completed by Surety.*)

The rate of premium on this bond is: $_____ per thousand dollars.

Total amount of premium charged is: $_____.

PLEASE NOTE: A CERTIFIED COPY OF THE POWER OF ATTORNEY OF THE SURETY'S AUTHORIZED SIGNATORY MUST BE ATTACHED TO THIS BID BOND.

CERTIFICATION REGARDING DVBE EFFORTS (NOT REQUIRED)

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that: (i) the undersigned is a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, has executed this certification on behalf of the Bidder; and (ii) the Bidder made reasonable efforts, as required by the Contract, to secure participation in the Contract by Disabled Veteran Business Enterprises ("DVBE"), including participation by DVBE subcontractors, material suppliers, and others. The undersigned, on behalf of the Bidder and subject to penalty for perjury pursuant to California law, further certifies that (check only one of the following):

☐ BIDDER DID NOT SECURE DVBE PARTICIPATION IN THE CONTRACT. However, if awarded the Contract, the Bidder will use DVBE services on the Project if the opportunity reasonably arises at any time during construction of the Project. Upon completion of the Project and as a condition precedent to final payment to the Bidder pursuant to the Contract, the Bidder shall report to the District the total dollar amount of DVBE participation in the Contract, including, without limitation, any work performed pursuant to Change Orders.

☐ THE BIDDER SECURED DVBE PARTICIPATION IN THE CONTRACT, AS DESCRIBED ON THE ATTACHMENT SHEET(S) ATTACHED HERETO. The Bidder shall use additional DVBE services on the Project if the opportunity reasonably arises at any time during construction of the Project. Upon completion of the Project and as a condition precedent to final payment to the Bidder pursuant to the Contract, the Bidder shall report to the District the total dollar amount of DVBE participation in the Contract, including, without limitation, any work performed pursuant to Change Orders.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING DVBE EFFORTS – ATTACHMENT SHEET (NOT REQUIRED)

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

Attachment Sheet _____ of _____

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1. DVBE Entity Name: _____

   California DVBE Certification No.: _____ Telephone No.: _____

   Business Address: _____

   Anticipated Participation in Contract: $_____

   Type of Participation: _____

2. DVBE Entity Name: _____

   California DVBE Certification No.: _____ Telephone No.: _____

   Business Address: _____

   Anticipated Participation in Contract: $_____

   Type of Participation: _____

3. DVBE Entity Name: _____

   California DVBE Certification No.: _____ Telephone No.: _____

   Business Address: _____

   Anticipated Participation in Contract: $_____

   Type of Participation: _____

4. DVBE Entity Name: _____

   California DVBE Certification No.: _____ Telephone No.: _____

   Business Address: _____

   Anticipated Participation in Contract: $_____

   Type of Participation: _____

PLEASE NOTE: TYPES OF DVBE PARTICIPATION MAY INCLUDE, BUT ARE NOT LIMITED TO: (I) CONSTRUCTION; (II) ARCHITECTURAL AND/OR ENGINEERING; (III) SUPPLIERS OF MATERIALS, EQUIPMENT AND/OR SUPPLIES; AND (IV) INFORMATION TECHNOLOGY.

NON-COLLUSION DECLARATION

Project Owner: Tustin Unified School District
Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School
Bid No.: 386
Contractor Name: _____

The undersigned hereby declares:

I am the (insert position) _____ of or for the Contractor identified above (herein, the "Bidder"), the party submitting the bid with which this declaration has been submitted.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the Bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true.

The Bidder has not, directly or indirectly, submitted its bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

A person executing this declaration, on behalf of the Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare subject to penalty for perjury pursuant to California law that all of the foregoing is true and correct, and that this declaration was executed on (insert date) _____,

at (insert city) _____, (insert state) _____.

Representative Name: _____

Representative Signature: _____

CERTIFICATION REGARDING RECENT PROJECTS

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above, subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above (herein, "Bidder") and, in that capacity, I have executed this certification on behalf of the Bidder.

(ii) Each and all public projects as defined in Public Contract Code Section 22002 (each a "Public Project") that the Bidder contracted to complete for California public school districts, within the five-year period immediately prior to when the Bidder submitted its bid for the Project identified above, are listed and detailed in one or more attachment sheets submitted with this Certification (collectively, the "Project List").

(iii) The Project List submitted with this Certification is complete, and it does not omit any Public Project for which the Bidder entered into a contract, regardless of whether the Public Project ultimately was completed, and regardless of which construction delivery method was (or would have been) applicable to the Public Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: THIS CERTIFICATION MUST BE ACCOMPANIED BY ONE OR MORE COPIES OF THE ATTACHMENT SHEET (BELOW) THAT, COLLECTIVELY, LIST AND DETAIL ALL PUBLIC PROJECTS THAT THE BIDDER CONTRACTED TO COMPLETE WITHIN FIVE-YEAR PERIOD IMMEDIATELY PRIOR TO SUBMITTING ITS BID FOR THE PROJECT.

ATTACHMENT SHEET – PROJECT LIST

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

Attachment Sheet _____ of _____

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1. School District Name: _____

   District Contact Name and Telephone Number: _____

   Project Name/No.: _____ Contract Amount: _____

   Contract Type (specify Prime Contract or Subcontract): _____

   General Type and Scope of work: _____

   _____

2. School District Name: _____

   District Contact Name and Telephone Number: _____

   Project Name/No.: _____ Contract Amount: _____

   Contract Type (specify Prime Contract or Subcontract): _____

   General Type and Scope of work: _____

   _____

3. School District Name: _____

   District Contact Name and Telephone Number: _____

   Project Name/No.: _____ Contract Amount: _____

   Contract Type (specify Prime Contract or Subcontract): _____

   General Type and Scope of work: _____

   _____

4. School District Name: _____

   District Contact Name and Telephone Number: _____

   Project Name/No.: _____ Contract Amount: _____

   Contract Type (specify Prime Contract or Subcontract): _____

   General Type and Scope of work: _____

   _____

CERTIFICATION REGARDING SITE VISIT

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

Site Visit Date: _____

Site Visit Attendee(s): _____

The undersigned hereby certifies to the Project Owner identified above, subject to penalty for perjury pursuant to California law, that the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, has executed this certification on behalf of the Bidder.

(ii) Each person identified as a Site Visit Attendee above (which may or may not include the undersigned): (a) attended the entire mandatory portion of the Pre-Bid Conference and Site Visit, on the Site Visit Date specified above; and (b) signed the attendance sheet for the Pre-Bid Conference and Site Visit.

(iii) The Site Visit Attendee(s) identified above has/have sufficient knowledge, experience, and resources to have undertaken the activities, acquired the knowledge and developed the understandings, and reached the conclusions as are described and set forth in this Certification Regarding Site Visit.

(iv) On the Site Visit Date specified above, the Site Visit Attendee(s) inspected the Project Site and all conditions at the Project Site that will or might affect the performance of the Work, including, without limitation: (a) the general shape, layout, slope, crossfall, and other geographic features of the Project Site; (b) any right-of-way and access limitations and/or restrictions affecting the Project Site; (c) any existing buildings, hardscape, paving and other improvements on, at or in the vicinity of the Project Site; (d) any encroachments on the Project Site; (e) any manholes, pullboxes, valves, valveboxes, backflow preventers, stormdrain inlets and outlets, and other physical features on, at or in the vicinity of the Project Site that may indicate the presence of subsurface utilities or other improvements on or in the vicinity of the Project Site; (f) any reasonably apparent past or present uses of the Project Site, and reasonably apparent age or condition of any improvements on or at the Project Site, that may indicate presence of any asbestos, lead or other hazardous materials on or at the Project Site; and (g) any mature trees or other vegetation, natural drainage or watercourses, and other landscape features on or in the vicinity of the Project Site.

(v) Based on the inspection described in the foregoing clause, the Site Visit Attendee(s) became aware of, and developed an understanding of, the factors that will or might affect the performance of the Work, including, without limitation: (a) the existing conditions, facilities and

other improvements; (b) existing and potential timing, access, and geographic limitations and restrictions; and (c) potential hazards and difficulties associated with the Work.

(vi) The Bidder acknowledges and agrees that: (a) the knowledge and understandings of the Site Visit Attendees described in the foregoing clauses of this Certification Regarding Site Visit shall be attributed to and deemed to be the knowledge and understanding of the Bidder, and (b) the District shall rely on the Bidder having such knowledge and understanding if the District awards the Contract to the Bidder.

(vii) Without limiting the foregoing clause of this Certification Regarding Site Visit, the Bidder acknowledges and agrees that, if the District awards the Contract to the Bidder, the Bidder shall accept full responsibility for all factors that will or might affect the performance of the Work, as described in this Certification Regarding Site Visit, that reasonably could have been observed, identified, or learned by the Site Visit Attendee(s) during the Pre-Bid Conference and Site Visit.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING CONTRACTOR REGISTRATION

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above (herein, "Bidder") and, in that capacity, I have executed this certification on behalf of the Bidder.

(ii) The Bidder is aware and acknowledges that, except as authorized by Business and Professions Code Section 7029.1 and Public Contract Code Section 20103.5, no contractor may submit a bid for any work on a public works project unless the contractor is, and no subcontractor may be listed in any bid for work on a public works project unless the subcontractor is, currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5.

(iii) The Bidder is aware and acknowledges that no contractor or subcontractor may be awarded a contract for work on a public works project, or may perform any work on a public works project, unless the contractor or subcontractor is currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5.

(iv) The Bidder is aware and acknowledges that, notwithstanding anything to the contrary, if awarded the Contract and at any time during the performance of the Work, the Bidder or any of its subcontractors is not duly registered pursuant to Labor Code Section 1725.5 (including, without limitation, if the registration expires or the DIR revokes the registration), the District in its sole discretion may cancel the Contract and/or replace the Bidder or subcontractor with a contractor or subcontractor that is duly registered pursuant to Labor Code Section 1725.5, and the Bidder and/or its surety shall be responsible for any and all associated costs incurred by the District.

(v) If awarded the Contract, and the Bidder at any time during the Project intends to use a subcontractor that was not listed in its bid (e.g., a subcontractor performing work costing less than one-half of one percent of the Bidder's total bid amount or a subcontractor needed for work added by change order), then, before the subcontractor performs any work on the Project, the Bidder must provide written notice to the District that identifies the subcontractor and includes the printout described at the bottom of this form as evidence that the subcontractor is properly registered with the DIR.

(vi) The Bidder acknowledges that, if awarded the Contract, the Bidder must: (i) monitor the registration status of its subcontractors on a regular, ongoing basis; and (ii) inform the District in writing if any of its subcontractors is or becomes not duly registered.

(vii) The Bidder and each subcontractor specified on the Subcontractor Listing accompanying the Bidder's bid are duly registered with the DIR pursuant to Labor Code Section 1725.5.

(viii) Evidence (in the form described in the note below) that the Bidder and each such subcontractor are duly registered with the DIR pursuant to Labor Code Section 1725.5 is attached to this certification.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: THIS CERTIFICATION MUST BE ACCOMPANIED BY PRINTOUTS OF THE APPLICABLE SCREENS/PAGES ON THE DIR WEBSITE EVIDENCING THAT THE BIDDER AND ALL LISTED SUBCONTRACTORS ARE CURRENTLY REGISTERED PURSUANT TO LABOR CODE SECTION 1725.5.

NOTICE AND CERTIFICATION REGARDING RUSSIA-RELATED SANCTIONS

(Executive Order N-6-22)

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

NOTICE TO BIDDER

On March 4, 2022, California Governor Gavin Newsom issued Executive Order No. N-6-22 ("Executive Order") relating to sanctions imposed by the U.S. government and the State of California in response to actions in Ukraine by the Russian Federation ("Russia").

Among other things, the Executive Order "calls upon businesses, non-governmental organizations, and public entities in the State [of California] to review their investments and contracts to ensure their compliance with economic sanctions imposed by the U.S. government in response to Russia's actions in Ukraine, as well as any sanctions imposed under state law (collectively economic sanctions), and to take actions to support the Ukrainian government and people, including by refraining from new investments in, and financial transactions with, Russian institutions or companies that are headquartered or have their principal place of business in Russia (Russian entities), not transferring technology to Russia or Russian entities, and directly providing support to the government and people of Ukraine."

The Executive Order requires that all California State agencies and departments subject to the Governor's authority: (i) review contracts for commodities, services, and technology to determine compliance with such federal and State of California economic sanctions ("Economic Sanctions"); (ii) terminate contracts with entities or individuals that are a target of the Economic Sanctions; and (iii) not enter into any additional contracts with such entities or individuals.

The Executive Order further requires that each California State agency and department: (i) notify all grantees of the agency or department (each a "Grantee") and contractors with contracts of $5 million or more (each, a "State Contractor") of their obligations to comply with the Economic Sanctions; (ii) direct all Grantees and State Contractors to report to the agency or department regarding their compliance with the Economic Sanctions; and (iii) direct all Grantees and State Contractors to report on steps they have taken in response to Russia's activities in Ukraine.

CERTIFICATION BY BIDDER

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) I am a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, I have executed this certification on behalf of the Bidder.

(ii) The Bidder acknowledges that, in connection with various programs, services, and activities undertaken by the District from time to time, the District receives grant funding provided through one or more California State agencies or departments.

(iii) The Bidder represents and warrants that neither the Bidder nor any of its directors, officers, or affiliates: (i) invests in, or has financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia ("Russian Entities"); or (ii) transfers technology to Russia or any Russian Entities.

(iv) The Bidder represents and agrees that, if the District awards the contract for the Project to the Bidder ("Contract"), and in connection with the Bidder's activities pursuant to the Contract, neither the Bidder nor any of its directors, officers, or affiliates shall engage in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violate any of the Economic Sanctions.

(v) The Bidder acknowledges and agrees that, while the Contract is in effect, if the Bidder or any of its directors, officers, or affiliates engages in any of the activities described in the foregoing Clause (iii) of this form, or otherwise violates any of the Economic Sanctions, then, following notice and a thirty-day opportunity for the Bidder to submit a written response, and in the District's sole discretion or as may be required by the State of California, the District may terminate the Contract and, in addition, the District and/or State of California may take any and all other actions as permitted by applicable law.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

NOTICE AND CERTIFICATION REGARDING THE IN-USE OFF-ROAD DIESEL-FUELED FLEETS REGULATION

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

NOTICE TO BIDDER

The In-Use Off-Road Diesel-Fueled Fleets Regulation promulgated by the California Air Resources Board ("CARB") and set forth at Title 13 of the California Code of Regulations, Section 2449 *et seq.* ("CARB Regulation"), establishes certain contracting requirements applicable to public projects. Such requirements must be satisfied prior to the awarding body and prime contractor entering into (or renewing) a contract for a public project, if any one or more vehicles subject to the CARB Regulation are used on the project.

The CARB Regulation requires that any vehicle fleet subject to the regulation must meet certain emissions-related performance standards, depending on whether the fleet is large, medium, or small in size. These requirements apply regardless of whether a fleet is owned by a private entity or a public agency. The CARB Regulation provides that, after a fleet owner submits to CARB certain reports and an affirmation indicating that the fleet complies with the CARB Regulation, CARB will issue a "Certificate of Reported Compliance with the Regulation for In-Use Off-Road Diesel-Fueled Fleets" ("Certificate of Reported Compliance") for that fleet. Any fleet owner that knowingly submits any false statement or representation, or otherwise fails to comply with the CARB Regulation, may be subject to civil or criminal penalties.

The CARB Regulation prohibits public agencies from entering into a contract with a prime contractor, for any project involving the use of any one or more vehicles subject to the CARB Regulation, unless the prime contractor has a valid and current Certificate of Reported Compliance for each fleet that will be used in the performance of that contract, whether by the prime contractor or any of it's listed subcontractors. Such Certificates of Reported Compliance must be retained for a period of three years following completion of the project, and must be provided to CARB within five business days of its request.

The foregoing is a summary of the requirements of the CARB Regulation and, as a summary, it does not describe all of the details and provisions of the CARB Regulation. Any and each Bidder desiring more information regarding the CARB Regulation is hereby advised to consult with its own legal counsel.

Certification

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to the laws of the State of California, that all of the following is true and correct:

(i) I am a duly authorized representative of the Contractor identified above (herein, the "Bidder") and, in that capacity, I have executed this certification on behalf of the Bidder.

(ii) Prior to submitting its bid for the Project identified above, the Bidder (a) read the Notice set forth above, and (b) consulted, or had unqualified opportunities to consult, with its own legal counsel regarding the requirements of the CARB Regulation.

(iii) If the District awards the Contract for the Project to the Bidder, then, as between the Bidder and the District, the Bidder shall be responsible and liable for ensuring that it and those of its subcontractors that use, on the Project, any one or more vehicles subject to the CARB Regulation (each a "Vehicle Fleet") shall at all times be in compliance with applicable requirements of the CARB Regulation.

(iv) The Bidder has submitted with this Certification, if applicable, a comprehensive list of the Vehicle Fleets that the Bidder, as of the date it submitted its bid for the project, reasonably believes will be necessary, and that the Bidder intends will be operated and used, in connection with the Project identified above in this Certification ("Fleet List").

(v) The Bidder has submitted with this Certification, if applicable, a complete and accurate copy of a current and valid Certificate of Reported Compliance for each and every Vehicle Fleet identified on the Fleet List submitted with this Certification.

(vi) The Bidder acknowledges and agrees that, If the District awards the Contract to the Bidder, and if for any reason thereafter (including, without limitation, as the result of any substitution, Change Order, or other change to the Contract) it will be necessary for the Bidder or any subcontractor to use a Vehicle Fleet not identified on the Fleet List, then, in each such case, the Bidder shall: (a) identify the Vehicle Fleet in writing ("Fleet Identifier"); (b) obtain a current and valid Certificate of Reported Compliance for the Vehicle Fleet; and (c) provide to the District both the Fleet Identifier and a complete and accurate copy of the associated Certificate of Reported Compliance.

(vii) The Bidder acknowledges that, for purpose of determining compliance with the CARB Regulation, an agent or employee of CARB, upon presentation of proper credentials, has the right to enter any facility (with any necessary safety clearances) where off-road vehicles are located or off-road vehicle records are kept.

(viii) The Bidder agrees that, if the District awards the Contract to the Bidder, the Bidder shall indemnify, defend, and hold-harmless the District, in accordance with the Contract, with respect to any and all claims, demands, actions, costs and expenses (including, without limitation, attorney fees), and other liabilities of any nature whatsoever that arise from any failure by the Bidder or any of its subcontractors to comply with the CARB Regulation.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: A BID WILL NOT BE RESPONSIVE TO THE REQUIREMENTS OF THE BID DOCUMENTS IF THE BIDDER FAILS TO SUBMIT WITH THIS CERTIFICATION A COMPREHENSIVE FLEET LIST AND ASSOCIATED CERTIFICATES OF REPORTED COMPLIANCE IN ACCORDANCE WITH CLAUSES (IV) AND (V) ABOVE.

REQUIRED CONTRACT FORMS

The Contractor must complete, duly execute, and submit the following forms to the District when required after award of the Contract:

1. Agreement for Construction Services

2. Certification Regarding Employee Background Checks

3. Certification Regarding Drug-Free Workplace

4. Certification Regarding Tobacco-Free Workplace

5. Certification Regarding Workers Compensation

6. Notice and Certification Regarding Lead-Free Materials

7. Certification Regarding Asbestos

8. Payment Bond – **Complete one form for each contract you are awarded**

9. Performance Bond - **Complete one form for each contract you are awarded**

10. Certification Regarding DVBE Participation – Not Required

11. Form W-9 (Not included herein -- Contractor must itself obtain a current copy of Form W-9)

AGREEMENT FOR CONSTRUCTION SERVICES

This Agreement for Construction Services is made effective as of April 14, 2025, by and between the Tustin Unified School District ("District"), a public school district organized and existing pursuant to the laws of the State of California, and Click here to enter Contractor's full legal name ("Contractor"), a California Stock Corporation. The District and the Contractor may be referred to individually as "Party" and collectively as the "Parties."

Section 1. ***Project.*** The Parties have entered into the Contract with respect to the following public works construction project of the District ("Project"): Click here to enter Project name/Bid Number.

Section 2. ***Component Parts of Contract.*** The entire understanding and agreement between the District and the Contractor relating to the Project (the "Contract") includes and by this reference incorporates in full all of the documents described in this Section (collectively, the "Contract Documents"). The Contract Documents are intended to be complementary and form an integrated and binding whole. Contractor shall perform the work required by any one of the Contract Documents, even if that work is not referenced in any other Contract Document, as if that work is required by each and every Contract Document. The Contract Documents include:

(i) Notice Inviting Bids
(ii) Instructions for Bidders
(iii) Description of Work
(iv) Master Schedule
(v) All Required Bidding Forms, including, without limitation, Contractor's completed and executed Bid Proposal form
(vi) Notice of Award
(vii) All plans, drawings, and specifications for the Project, including, without limitation, attachments thereto and any and all approved shop-drawing submittals ("Plans and Specifications")
(viii) All Required Contract Forms, including, without limitation, Contractor's completed and executed Agreement for Construction Services
(ix) Special Provisions
(x) General Provisions
(xi) Any and all Change Orders and other duly approved modifications to the Contract Documents
(xii) Each addendum to the Plans and Specifications
(xiii) Each response to Bidder Clarification Request

Section 3. ***Scope of Work.*** The Contractor shall, at its own cost and expense, furnish all construction and other services (including, but not limited to, all labor, materials, tools, equipment, services, administration, supervision, and incidental and customary work) necessary and appropriate to fully and adequately complete the Project in strict accordance with the Contract Documents ("Work"). Should any detail or dimension be inadvertently omitted from the Plans and Specifications, it shall be the Contractor's responsibility to request from the Architect the required details or information and to perform the Work in conformance therewith so that, upon completion of the Work, it will be acceptable and ready for use by the District.

Section 4. ***Completion of Work.*** Time is of the essence with respect to completion of the Project. The Contract requires the exact and full performance of the Work by the Contractor. The

District shall provide notice to the Contractor specifying the date upon which the Contractor is to commence the Work ("Notice to Proceed"). The Contractor shall fully and satisfactorily complete all of the Work within the Contract Time and not later than the Required Completion Date specified in the Master Schedule, as those may be adjusted in accordance with the Contract. The Contractor acknowledges and agrees that: (i) it shall perform the Work in strict conformance with all schedule(s) or project milestone(s) set forth in the Master Schedule; and (ii) the Master Schedule is subject to revision depending on actual conditions in the field and other factors, and as otherwise provided by the Contract. The Contractor must perform the Work in full compliance with the Master Schedule, including, without limitation, as it may be revised in accordance with the Contract, without additional compensation except as may be permitted pursuant to the Contract Documents. The legal doctrine that a contractor may recover for substantial performance of a building contract (i.e., "Doctrine of Substantial Performance") shall not be deemed or construed to apply to the Contract.

Section 5. Certification of Contractor's License. By signing this Agreement for Construction Services, the Contractor shall be deemed and construed to thereby certify, subject to penalty for perjury pursuant to California law, that the Contractor possesses a current and valid contractor's license issued by the CSLB, with classification(s) that the Contractor represents and warrants is(are) appropriate for the Contractor, in conjunction with any subcontractors listed in the Bid Proposal, to perform all of the Work in accordance with California law.

Section 6. Payment to Contractor. In exchange for the full and satisfactory performance of the Work, the District shall pay to the Contractor the total, all-inclusive amount of Click here to enter Contract Amount in words ($Click here to enter Contract Amount in numbers) ("Contract Amount"). The Contract Amount shall be subject to adjustment as provided in the Contract Documents through authorized Change Orders approved by the District. Payments to the Contractor shall be made as the Work progresses (each a "Progress Payment") based on Progress Payment Applications submitted by the Contractor and subject to Retention, as set forth in the General Provisions.

Section 7. District Representative. The authorized representative of the District for purposes of the administration of the Contract ("District Representative") shall be Tom Rizzuti, Director of Facilities and Planning, who may be reached at (714) 730-7515. With respect to the matters within the authority of the District Representative, the Contractor shall not accept any instruction or direction from any person purporting to represent the District other than the District Representative or his or her designee(s). Notwithstanding the foregoing, and subject to Section 6.3 of the General Provisions, each of the District's Assistant Superintendent of Business Services and Senior Director of Maintenance & Operations shall have authority to act on behalf of the District for all purposes of the Contract, including, among other situations, if the District Representative is not available on a timely basis.

Section 8. Giving or Service of Notices.

Subsection 8.1 Generally. Each notice, demand, and other communication required or given pursuant to the Contract (each a "Notice") must be in writing, duly addressed as indicated below, and given by: (i) registered or certified mail (postage prepaid and return receipt requested); (ii) UPS, FedEx or other reliable private express delivery (delivery charge prepaid and signature on electronic or other delivery receipt requested); or (iii) email transmission (with original of notice sent via first class U.S. Mail within 24 hours after the email has been sent). A Notice shall be deemed to have been given, served, or received only upon actual receipt by the addressee. In the case of email, "actual receipt" shall mean delivery to the recipient's email in-box. However, if a Notice, including, without

limitation, any Notice sent by email, is delivered after 4:00 p.m. on any day (whether or not it is a business day), the Notice shall be deemed to have been given or served as of 9:00 a.m. on the next subsequent business day. For purposes of the Contract, a "business day" is any day that is not: (i) a Saturday or Sunday; (ii) a federal or State holiday; or (iii) a State- or District Board-mandated furlough day with respect to the District's administrative personnel. Because email addresses are subject to change more frequently than physical addresses, if a Notice is to be sent by email, unless the sender has personal knowledge of the correct, then-current email address of each intended recipient, the sender must call and verify the then-current email address of each intended recipient prior to sending the Notice, or must choose another authorized delivery method. This Section shall not be deemed or construed to apply to day-to-day communications between the Parties for purposes of administering the Contract or performance of the Work, or to service of process in accordance with any applicable law or rule of court. Any Party to the Contract may change its below-specified name, address, or person to whom attention should be directed by giving notice as specified in this Section. Notices, demands, and other communications, as applicable, shall be duly addressed as follows:

To the District:
Tustin Unified School District
Attn: Tom Rizzuti, Director of Facilities and Planning
1302 Service Road
Tustin, CA 92780
Email: trizzuti@tustin.k12.ca.us

With Copy to:
Tustin Unified School District
Attn: Sal Sanchez, Sr. Director of Maintenance & Operations
1302 Service Road
Tustin, CA 92780
Email: ssanchez@tustin.k12.ca.us

To the Contractor:
Click here to enter Contractor Name
Attn:
Click here to enter city, state and zip
Email:

Subsection 8.2 Notice of Emergencies. Notwithstanding anything in the Contract to the contrary, in the event of any emergency or urgent situation, the Contractor must make reasonable attempts to contact the District Representative by telephone and shall follow up such telephone contact with written confirmation. Telephone numbers for "after hours" communications are:

District Representative: (714) 730-7515
Contractor Representative: Click here to enter telephone number

Subsection 8.3 Notice of Change in Contractor Contact Information. The Contractor shall give written notice to the District, within five business days, of any change in the Contractor's address, telephone number(s) or other contact information. **ANY AND EACH FAILURE BY THE CONTRACTOR TO PROVIDE SUCH NOTICE SHALL BE DEEMED TO BE A MATERIAL BREACH BY THE CONTRACTOR OF ITS OBLIGATIONS PURSUANT TO THE CONTRACT.**

Subsection 8.4 District Notice of Claims. Pursuant to Public Contract Code Section 9201, the District shall give written notice to the Contractor of any and each third-party claim relating to the Contract, in each case by mailing notice of the claim within ten calendar days following receipt of the claim by the District. Public Contract Code Section 9201 provides that the District shall be entitled to reimbursement, from the Contractor, of the District's reasonable costs incurred in providing such notices to the Contractor.

Section 9. ***Attorneys' Fees.*** In connection with any and each action or other proceeding to enforce the Contract and/or to resolve any dispute between the Parties that arises from the Contract, Work or Project, each Party shall be responsible for paying its own costs and expenses incurred in connection with such action or other proceeding, including, without limitation, attorneys' fees, expert witness costs, and related expenses.

Section 10. ***Entire Agreement.*** The Contract constitutes the entire agreement of the Parties with respect to the performance of the Work by the Contractor and supersedes any and all prior and contemporaneous communications, negotiations, understandings, and agreements related to the Work, whether oral or written. The Contract may be modified only by written instrument duly approved and signed by both Parties. Any provision, printed or otherwise, contained in any acknowledgment of the Contract or purchase order or invoice related to the Contract that is inconsistent with, different from, or in addition to the terms and conditions contained in the Contract or any documents specifically referenced and incorporated herein, shall have no force or effect whatsoever.

Section 11. ***Assignment.*** Contractor shall not assign, sublet or by any other means transfer the Contract or any obligation, right, title or interest herein, including right to payments hereunder, without the prior written consent of District. The Contract shall be binding on any authorized assignee, sublessee, transferee, or other successor to the Contractor. If Contractor attempts, without District permission, to assign, sublet or by any other means transfer the Contract or any obligation, right, title or interest herein, the District may, at its option, terminate the Contract and shall thereafter be relieved from any and all obligations to Contractor and any purported assignee, sublessee, or transferee.

Section 12. ***Counterparts.*** The Contract may be executed in counterparts, each of which shall constitute an original and all of which shall constitute but one and the same instrument.

Section 13. ***Due Authority.*** Each individual that signs the Contract on behalf of a Party thereby represents and warrants that he or she has been authorized by appropriate action of such Party to sign, and thereby bind such Party to, the Contract.

In Witness Whereof, the duly authorized representatives of the Parties have executed the Contract, as evidenced by their signatures below.

Tustin Unified School District	***Click here to enter Contractor Name***
By: _____	By: _____
Print Name: _____	Print Name: _____
Title: _____	Title: _____
Dated: _____	Dated: _____

District Board Approved: _____

CERTIFICATION REGARDING EMPLOYEE BACKGROUND CHECKS

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor;

(ii) The Contractor has fully complied with the requirements of Section 3.7 of the General Provisions for employee background checks, including, without limitation, with respect to employees of any subcontractors that the Contractor intends to use on the Project;

(iii) All of the employees of the Contractor and its subcontractors who will enter in or upon the Project Site, or be in the vicinity of the Project Site, in connection with the Project are identified on the Attachment Sheet(s) attached hereto;

(iv) None of the employees of the Contractor or its subcontractors who are identified on the Attachment Sheet(s) attached hereto have been convicted of a violent or serious felony as defined in Subdivision (c) of Education Code Section 45125.2; and

(v) Except for the employees identified on the Attachment Sheet(s) attached hereto (and except for the employees identified on attachment(s) to other certifications using this form that the Contractor has submitted to the District in connection with the Project), the Contractor shall not suffer or permit any employees of the Contractor or any of its subcontractors to enter in or upon the Project Site, or to be in the vicinity of the Project Site, in connection with the Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: THE CONTRACTOR MUST ATTACH THIS CERTIFICATION TO THE LIST(S) OF EMPLOYEES PREPARED USING THE FOLLOWING ATTACHMENT SHEET.

CERTIFICATION REGARDING EMPLOYEE BACKGROUND CHECKS – ATTACHMENT SHEET

Contractor Name: _____

Instructions

(1) For each employee, insert all required information (as specified in the table below) in one row of the table.

(2) In the "Driver License/Identification" column in the table below: (i) specify the number of the employee's driver's license or, if the employee does not have a driver's license, the number of the employee's state-issued identification; and (ii) specify the state that issued the driver's license or identification.

(3) If identifying more than ten employees: (i) use copies of this Attachment Sheet to identify the additional employees; and (ii) on each such copy, specify the sheet number and total number of sheets where indicated at the bottom of this Attachment Sheet.

	Employer (Company)	Employee Name and Position	Sex	Date of Birth	Height	Weight	Hair Color	Eye Color	Driver License/ Identification #
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Attachment Sheet _____ of _____

PLEASE NOTE: THE FOREGOING INFORMATION IS PRESUMED TO BE EXEMPT FROM DISCLOSURE PURSUANT TO THE CA PUBLIC RECORDS ACT.

CERTIFICATION REGARDING DRUG-FREE WORKPLACE

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor;

(ii) The Contractor, in accordance with Government Code Section 8350 *et seq*., the Drug-Free Workplace Act of 1990, shall provide a drug-free workplace by doing all of the following:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition.

(b) Establishing a drug-free awareness program to inform employees about all of the following:

(1) The dangers of drug abuse in the workplace;
(2) The person's or organization's policy of maintaining a drug-free workplace;
(3) The availability of drug counseling, rehabilitation and employee-assistance programs; and
(4) The penalties that may be imposed upon employees for drug abuse violations.

(c) Requiring that each employee engaged in the performance of the Contract be given a copy of the statement required by clause (ii)(a) above, and that, as a condition of employment on the Project, the employee agrees to abide by the terms of the statement.

(iii) The Contractor hereby acknowledges and agrees that, if the District determines that the certification given herein is false, or the Contractor violated this certification by failing to implement the requirements of Government Code Section 8355, then the Contract shall be subject to termination, suspension of payments, or both, and the Contractor shall be subject to debarment in accordance with the requirements of Government Code Section 8350 *et seq*.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING TOBACCO-FREE WORKPLACE

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor.

(ii) The Contractor shall ensure a tobacco-free workplace by doing both of the following:

(a) Providing the following statement, in writing, to each person providing any labor or services on or at the Project Site, including, without limitation, any delivery personnel:

ALL PROPERTIES AND FACILITIES OWNED OR OPERATED BY THE TUSTIN UNIFIED SCHOOL DISTRICT, INCLUDING, WITHOUT LIMITATION, THE PROJECT SITE, ARE TOBACCO-FREE WORK PLACES. IT IS STRICTLY FORBIDDEN WHILE IN, ON, OR AT ANY DISTRICT OWNED OR OPERATED PROPERTY OR FACILITY TO SMOKE, CHEW OR OTHERWISE USE TOBACCO PRODUCTS. THE CONTRACTOR SHALL REMOVE AND PERMANENTLY BAR, FROM THE PROJECT SITE, ANY AND EACH PERSON (INCLUDING, WITHOUT LIMITATION, EMPLOYEES OF ANY SUBCONTRACTOR OR SUPPLIER) WHO VIOLATES THE FOREGOING PROHIBITION.

(b) Enforcing the requirements specified in the foregoing provision.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING WORKERS COMPENSATION

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above, subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor; and

(ii) The Contractor is aware of the provisions of Labor Code Section 3700 *et seq.*, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of the Labor Code, and the Contractor shall comply with such provisions prior to commencing and throughout the entirety of performance of the Work on the Project.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

NOTICE AND CERTIFICATION REGARDING LEAD-FREE MATERIALS

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

NOTICE:

If the Work involves or relates to other than entirely new construction, the Work may disturb lead-containing or lead-based paint and other building materials that may be incorporated into existing buildings or other improvements located on the site for construction of the Project ("Project Site"). Until sampling and testing confirms otherwise, it shall be presumed that all school buildings and improvements built in 1992 or earlier contain lead-based or lead-containing paint. The Contractor must complete, sign and submit a copy of this Notice and Certification Regarding Lead-Free Materials to the Project Owner identified above (herein, the "District") prior to commencing the Work.

The Contractor shall be responsible for ensuring that its employees and subcontractors fully and adequately comply with, and that the Work is performed in conformance with, all applicable laws, ordinances, rules and regulations governing lead-based or lead-containing paint and other materials, including, but not limited to: (i) Education Code Section 32240 *et seq*.; (ii) Title 8, California Code of Regulations, Section 1532.1; and (iii) Title 17, California Code of Regulations, Section 35001 *et seq*.

If the Work involves renovation, modernization or other disturbance of any existing school buildings or improvements, the Contractor shall sample and test all materials as appropriate to determine whether lead-based paint or other materials are present and may present a hazard or threat during any such renovation or modernization. The Contractor shall provide the District with the results of any and all such testing, whether conducted prior to commencement of the Work, during the Work, or after completion of the Work.

Any and all Work that may result in the disturbance of lead-containing building materials must be coordinated through the District. Consistent with applicable law, when a lead-based hazard is identified, the Contractor shall utilize personnel certified by the California Department of Health Services to perform lead-related services. The District may at any time request that Contractor provide the training and certification records of each employee of the Contractor or subcontractor who provides lead-related services. The Contractor shall be solely responsible for proper disposal, in conformance with all applicable laws, of any and all lead-containing, lead-based or hazardous waste products including, but not limited to, paint chips, residue, and any other material that may be exposed or disturbed during the course of the Work.

California law prohibits, in the construction of any new school facility or in the modernization or renovation of any existing school facility, the use of lead-containing or lead-based paint, plumbing, solders, and other materials that may constitute a potential source of lead contamination.

In the event the Contractor or its employees or subcontractors fail to comply with all applicable laws, rules and regulations related to lead-containing or lead-based paints and other materials, or fail to comply with any other requirements set forth in this Notice and Certification Regarding Lead-Free Materials, the Contractor shall be held solely responsible for any and all costs associated with any investigative and/or corrective actions deemed necessary by the District, and shall indemnify, defend and hold harmless the District, pursuant to the indemnification provisions of the Contract for the Work, with respect to any and all claims, demands, actions, damages, costs, expenses, and other liabilities arising therefrom.

CERTIFICATION BY CONTRACTOR:

The undersigned hereby certifies to the District, subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor;

(ii) The Contractor has received notice that, in circumstances described in this Notice and Certification Regarding Lead-Free Materials, lead-based paint and/or other lead-containing materials may be located on the Project Site;

(iii) The Contractor has received notice that it must comply with all applicable laws, rules and regulations governing work with, and disposal of, such materials; and

(iv) In connection with the performance of the Work, the Contractor shall comply with all laws, rules and regulations applicable to work with, and disposal of, lead-based paint and/or other lead-containing materials, as well as the other requirements of this Notice and Certification Regarding Lead-Free Materials.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

CERTIFICATION REGARDING ASBESTOS

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above (herein, the "District"), subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor.

(ii) The Contractor is aware and acknowledges that, for purposes of this certification: (a) asbestos is any of chrysotile, crocidolite, amosite, anthophyllite, tremolite, actinolite or other minerals generally known as asbestos; and (b) an asbestos-containing material is any material or thing, or any component thereof, that contains, consists of, or is made up of greater than one-tenth of one percent (0.1%) asbestos.

(iii) The Contractor shall not use on, or incorporate into, the Project any asbestos or asbestos-containing materials, including, without limitation, in any tools, devices, clothing, or equipment used in the construction of any portion of the Project.

(iv) The Contractor has instructed its employees and subcontractors in regard to such prohibition against asbestos and asbestos-containing materials, and in regard to the hazards, risks and liabilities involved in the use of asbestos and asbestos-containing materials.

(v) The Contractor acknowledges and agrees that:

(a) Each dispute as to whether any material, equipment or other thing used on, or incorporated into, the Work contains asbestos or is an asbestos-containing material shall be settled by electron microscopy;

(b) The costs of any such tests shall be paid by the Contractor if the material is found to contain asbestos at a level greater than as specified herein; and

(c) The District shall reject any and all materials or other things incorporated into the Work that are determined to contain asbestos or asbestos-containing materials, and the Contractor, at no cost to the District, must remove, replace and/or repair as necessary any and all affected portions of the Work.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PAYMENT BOND

Project Owner: Tustin Unified School District of Orange County, California

Project: (CIRCLE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Contractor Name: _____

Surety Name: _____

Bond Number: _____

Penal Sum: _____ ($_____)

WHEREAS, the Project identified above is a public project and a public work in accordance with applicable law, and the Project Owner identified above (herein, the "School District") awarded to the Contractor identified above (herein, the "Principal") a contract providing for completion of the Project identified above ("Contract");

WHEREAS, the Contract and/or California Civil Code Section 9550 *et seq.* require that the Principal furnish a labor and materials payment bond to the School District that ensures the faithful performance of the Principal's obligations pursuant to the Contract to pay for materials, labor and other things as required by applicable law, which bond must have a penal sum equal to one hundred percent of the total amount payable by the School District to the Principal pursuant to the Contract; and

WHEREAS, the Surety identified above hereby represents to the School District that the Surety is an "admitted surety insurer" in accordance with Section 995.120 of the California Code of Civil Procedure;

NOW, THEREFORE, we, the Principal and Surety, are hereby held and firmly bound to the School District in an amount of lawful money of the United States of America equal to the Penal Sum specified above, the payment of which well and truly to be made, we hereby bind, jointly and severally, ourselves and our heirs, executors, administrators, and successors.

The condition of this obligation is that, if the Principal, or any of its heirs, executors, administrators, successors or assigns, or any of its subcontractors, fail in connection with the Project to pay as and when required (1) any of the persons authorized by California Civil Code Section 9100 to assert a claim against the Payment Bond, (2) amounts due under the Unemployment Insurance Code with respect to work or labor performed pursuant to the Contract, or (3) any amounts required to be deducted, withheld and paid over to the Employment Development Department from wages of employees of the Principal or any of its subcontractors pursuant to Section 13020 of the Unemployment Insurance Code with respect to such work and labor, then the Surety shall pay, in full, any and all claims for such amounts, in a total amount not in excess of the penal sum set forth herein, and also, in case suit is brought upon this Payment Bond, such reasonable attorneys' fees as fixed by the court.

This Payment Bond shall inure to the benefit of any and all of the persons named in California Civil Code Section 9100, so as to give a right of action to those persons or their assigns in any suit brought upon this Payment Bond.

The Surety hereby stipulates and agrees that this Payment Bond shall not be exonerated and the Surety shall not be released from its obligations pursuant to this Payment Bond on account of: (1) any

extension of time, change, amendment or other modification of the Contract or other Project documents, or of the Principal's rights and/or obligations pursuant thereto, and Surety hereby waives notice of any and all such modifications; (2) any rescission or attempted rescission of the Contract or this Payment Bond; (3) any fraud of any person or entity other than fraud of a claimant in connection with making a claim on this Payment Bond; or (4) any breach of any contract by the School District, the Principal or any person or entity for whose benefit Surety has issued this Payment Bond. The Surety further stipulates and agrees that this Payment Bond shall be construed most strongly against the Surety and in favor of the persons and entities for whose benefit Surety has issued this Payment Bond.

The Surety shall not be deemed to have fully and appropriately executed this Payment Bond unless Surety has provided all of the following information:

SURETY'S SOUTHERN CALIFORNIA/LOCAL REPRESENTATIVE	**SURETY'S REPRESENTATIVE FOR FILING CLAIMS**
_____	_____
Company Name	Company Name
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code
_____	_____
Representative Name	Representative Name
_____	_____
Representative Telephone Number	Representative Telephone Number
_____	_____
Representative Email Address	Representative Email Address

(The remainder of this page intentionally left blank.)

Each person who has signed this Payment Bond, below, on behalf of either the Principal or the Surety shall be deemed and construed to thereby represent and warrant that he, she, or they has been duly authorized by such party to sign, and thereby bind such party to, this Payment Bond.

IN WITNESS WHEREOF, the Principal and Surety have executed this Payment Bond as evidenced by the signatures below of their respective, duly authorized representatives.

PRINCIPAL	**SURETY**
_____	_____
Company Name	Company Name
_____	_____
Representative Signature	Representative Signature
_____	_____
Representative Name	Representative Name
_____	_____
Representative Title	Representative Title
_____	_____
Date Signed	Date Signed
Principal: Attach Notary acknowledgment to this Payment Bond and imprint corporate seal, if any, in the space below.	**Surety: Attach Notary acknowledgment and power of attorney to this Payment Bond and imprint corporate seal in the space below.**

PERFORMANCE BOND

Project Owner: Tustin Unified School District of Orange County, California

Project: (CIRCLE ONE) Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Contractor Name: _____

Surety Name: _____

Bond Number: _____

Penal Sum: _____ ($_____)

WHEREAS, the Project identified above is a public project and a public work in accordance with applicable law, and the Project Owner identified above (herein, the "School District") awarded to the Contractor identified above (herein, the "Principal") a contract providing for completion of the Project identified above ("Contract");

WHEREAS, the Contract requires that the Principal furnish a bond to the School District that ensures the faithful performance of the Principal's obligations pursuant to the Contract to fully and satisfactorily perform the work and services required by the Contract (collectively, the "Work"), which bond must have a penal sum equal to one hundred percent of the total amount payable by the School District to the Principal pursuant to the Contract; and

WHEREAS, the Surety identified above hereby represents and warrants to the School District that the Surety is an "admitted surety insurer" in accordance with Section 995.120 of the California Code of Civil Procedure;

NOW, THEREFORE, we, the Principal and Surety, are hereby held and firmly bound to the School District in an amount of lawful money of the United States of America equal to the Penal Sum specified above, the payment of which well and truly to be made, we hereby bind, jointly and severally, ourselves and our heirs, executors, administrators, and successors.

The condition of the foregoing payment obligation is that, if the Principal (or, to the extent permitted by the Contract, its heirs, executors, administrators, successors or assigns) shall fully perform all of the undertakings, terms, covenants, conditions, agreements and other obligations required of the Principal pursuant to the Contract and any amendments or changes thereto, and shall complete the Work in full and strict conformance with the requirements thereof, all within the time and in the manner designated therein, in all respects according to their true intent and meaning, then such obligation shall become null and void; otherwise, it shall remain in full force and effect.

A condition precedent to the satisfactory completion of the Contract is that, after the acceptance of the Project by the School District, the payment obligation of this Performance Bond shall remain in full force and effect, in the penal sum set forth herein, during all periods in which the Principal has any obligations pursuant to the Contract (including, without limitation, the obligations to make full, complete, and satisfactory repair and replacements of any defective materials and/or faulty workmanship, to pay liquidated damages and/or to indemnify the School District or any other party), and the obligation of Surety hereunder shall continue so long as any such obligation of Principal continues to exist. The

obligations of Surety pursuant to this Performance Bond are exclusive of and distinct from any obligations Surety may have pursuant to any labor and materials payment bond applicable to the Work.

Whenever the School District declares the Principal to be in breach of its obligations pursuant to the Contract, the School District having performed its obligations thereunder, the Surety, promptly within the time required by the Contract, shall remedy the breach or, at the School District's discretion, shall:

(i) Complete the Work in strict accordance with the terms and conditions of the Contract, including, without limitation, provisions for the time(s) within which the Surety must act; or

(ii) Obtain, or permit the School District to obtain, one or more bids or proposals for any and all work required to complete the Work in strict accordance with the terms and conditions of the Contract, and upon determination of each lowest responsive and responsible bidder or proposer, arrange for such bidder or proposer and the School District to enter into a contract (which, without limitation, may be in accordance with Education Code Section 17406), and make available as the work progresses sufficient funds, up to and including a total amount equal to the Penal Sum set forth above, to pay the cost of completing the Work.

In performing its obligations pursuant to this Performance Bond, the Surety expressly agrees that: (i) absent the express written consent of the School District, the Surety shall neither use the Principal nor accept a bid or proposal from the Principal for purposes of completing the Work; and (ii) the School District shall have the right, in its reasonable discretion, to reject any contractor or subcontractor that the Surety may propose to fulfill such obligations. In the event the School District provides notice to the Surety that the Principal is in breach of its obligations pursuant to the Contract and, therefore, the Surety is required, as provided herein, to complete the Work or to arrange for the School District to contract for completion of the Work, and, through no fault of the School District, the Surety has exceeded the time permitted pursuant to the Contract for doing so, the School District may arrange to use replacement contractor(s) selected and contracted for by the School District to complete the Work and, in such event, the Surety's payment and other obligations pursuant to this Performance Bond shall not thereby be obviated, limited, or otherwise modified.

Notwithstanding anything to the contrary, in the event the School District determines that the Principal has not met, or likely will be unable to meet, any deadline required pursuant to the Contract, or that Principal's performance otherwise does not conform with the requirements of the Contract, the School District may notify the Surety. In such event, the Surety must make reasonable attempts to assist the Principal to resolve or avoid the breach by the Principal. The Surety and Principal expressly agree that neither the giving of such notice by the School District nor the giving of such assistance by the Surety shall be deemed or construed to constitute interference by the School District or the Surety with the Contract or the ability of the Principal to obtain any bond(s) in any amount(s) from any surety insurer(s).

For value received, the Surety hereby stipulates and agrees that this Performance Bond shall not be exonerated and the Surety shall not be released from its obligations pursuant to this Performance Bond by any change, amendment or other modification of the Contract or other Project documents, or of the Principal's rights and/or obligations pursuant thereto, and Surety hereby waives notice of any and all such modifications.

(The remainder of this page intentionally left blank.)

The Surety shall not be deemed to have fully and appropriately executed this Performance Bond unless Surety has provided all of the following information:

SURETY'S SOUTHERN CALIFORNIA/LOCAL REPRESENTATIVE	**SURETY'S REPRESENTATIVE FOR FILING CLAIMS**
_____	_____
Company Name	Company Name
_____	_____
Street Address	Street Address
_____	_____
City, State, Zip Code	City, State, Zip Code
_____	_____
Representative Name	Representative Name
_____	_____
Representative Telephone Number	Representative Telephone Number
_____	_____
Representative Email Address	Representative Email Address

(The remainder of this page intentionally left blank.)

Each person who has signed this Performance Bond on behalf of either the Principal or the Surety shall be deemed and construed to thereby represent and warrant that he, she, or they has been duly authorized by such party to sign, and thereby bind such party to, this Performance Bond.

IN WITNESS WHEREOF, the Principal and Surety have executed this Performance Bond as evidenced by the signatures below of their respective, duly authorized representatives.

PRINCIPAL	**SURETY**
_____	_____
Company Name	Company Name
_____	_____
Representative Signature	Representative Signature
_____	_____
Representative Name	Representative Name
_____	_____
Representative Title	Representative Title
_____	_____
Date Signed	Date Signed

<u>Principal</u>: Attach Notary acknowledgment to this Performance Bond and imprint corporate seal, if any, in the space below.

<u>Surety</u>: Attach Notary acknowledgment and power of attorney to this Performance Bond and imprint corporate seal in the space below.

CERTIFICATION REGARDING DVBE PARTICIPATION (NOT REQUIRED)

Project Owner: Tustin Unified School District

Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School

Bid No.: 386

Contractor Name: _____

The undersigned hereby certifies to the Project Owner identified above, subject to penalty for perjury pursuant to California law, that all of the following is true and correct:

(i) The undersigned is a duly authorized representative of the Contractor identified above and, in that capacity, has executed this certification on behalf of the Contractor;

(ii) The California-certified DVBE entities listed on the Attachment Sheet(s) attached hereto participated in the Contract for the above-referenced Project to the extent described on such Attachment Sheet(s); and

(iii) The dollar amount of the DVBE participation in the Contract totaled: _____

_____ dollars ($_____),

which represents approximately _____ percent (_____ %) of the total Contract Amount as adjusted pursuant to the Contract, including, without limitation, adjustments for Change Orders.

Representative Name: _____

Representative Title: _____

Representative Signature: _____

Date Signed: _____

PLEASE NOTE: THIS CERTIFICATION PAGE MUST BE ACCOMPANIED BY THE LIST(S) OF DVBE ENTITIES PREPARED USING THE FOLLOWING ATTACHMENT SHEET. MAKE AND USE COPIES OF THE ATTACHMENT SHEET, AS NECESSARY TO LIST ADDITIONAL DVBE ENTITIES.

CERTIFICATION REGARDING DVBE PARTICIPATION – ATTACHMENT SHEET (NOT REQUIRED)

Project Owner: Tustin Unified School District
Project: Contract No. 1 Peters Canyon Elementary School; Contract No. 2 Columbus Tustin Middle School
Bid No.: 386
Contractor Name: _____

Attachment Sheet _____ of _____

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1. DVBE Entity Name: _____
   California DVBE Certification No.: _____ Telephone No.: _____
   Business Address: _____
   Participation in Contract: $_____
   Type of Participation: _____

2. DVBE Entity Name: _____
   California DVBE Certification No.: _____ Telephone No.: _____
   Business Address: _____
   Participation in Contract: $_____
   Type of Participation: _____

3. DVBE Entity Name: _____
   California DVBE Certification No.: _____ Telephone No.: _____
   Business Address: _____
   Participation in Contract: $_____
   Type of Participation: _____

4. DVBE Entity Name: _____
   California DVBE Certification No.: _____ Telephone No.: _____
   Business Address: _____
   Participation in Contract: $_____
   Type of Participation: _____

PLEASE NOTE: TYPES OF DVBE PARTICIPATION MAY INCLUDE, BUT ARE NOT LIMITED TO: (i) CONSTRUCTION; (ii) ARCHITECTURAL AND/OR ENGINEERING; (iii) SUPPLIERS OF MATERIALS, EQUIPMENT AND/OR SUPPLIES; AND (iv) INFORMATION TECHNOLOGY.

SPECIAL PROVISIONS

1. ***Effect of Special Provisions.*** These Special Provisions establish specific requirements applicable to the Work, the Project and/or the Project Site. To the extent these Special Provisions conflict with any provisions of the other Contract Documents, expressly modify the other Contract Documents, or establish requirements in addition to those set forth in the other Contract Documents, the Special Provisions shall to that extent govern over the other Contract Documents. However, the unaffected provisions of the other Contract Documents shall remain in full force and effect, without modification.

2. ***Architect.*** There is no Architect for the Project.

3. ***Project Consultant.*** There is no Project Consultant for the Project.

4. ***Copies of Plans and Specifications.*** Contractor shall be responsible for printing the sets of the Plans and Specifications that it needs for construction of the Project using the electronic copy available from the District upon request.

5. ***Applicable Laws, Regulations, Ordinances, or Other Requirements.*** In addition to other requirements described in the Contract Documents, the Contractor, prior to commencing any of the Work, must obtain or otherwise comply with the requirements described below in this Section. For each, the Contractor must maintain on the Project Site a current copy of documentation that evidences satisfaction of such requirements. Such requirements are as follows:

   (i) Business license issued by city or county (whichever is applicable) in which the Project Site is located.

6. ***Liquidated Damages.*** As noted in Section 5.5 of the General Provisions, time is of the essence with respect to the Contract and completion of the Work. The Liquidated Damages payable by the Contractor pursuant to Section 5.5 of the General Provisions shall be $1,000.00 per day or portion thereof.

7. ***Access to Project Site.***

   7.1 The failure of the Contractor or any of its employees, subcontractors, materials suppliers or others connected with the Work to comply with the provisions of this Section shall be deemed a material breach of the Contract by the Contractor.

   7.2 If the Project Site is an existing school of the District ("School"), then, except as expressly authorized by the District in its sole discretion, none of the Contractor, its subcontractors, materials suppliers or others providing any work or services in connection with the Project shall arrive at, enter or be present on or in the vicinity of the School, and no portion of the Work shall be performed on or at the School on any weekday (Monday through Friday, inclusive) when School is in session, between the hours of 7:30 a.m. and 3:30 p.m.

7.3 If the Project Site is a School, and the District has authorized any Work or deliveries to occur during School hours, then, in addition to complying with all other District requirements, the Contractor shall be responsible for:

(i) Ensuring that, at all times during the arrival and/or movement of vehicles, a flag-person is present and directing traffic, and that other necessary traffic safety measures are in effect, to ensure safety of students and other persons; and

(ii) Ensuring that each of its employees, and any employees of its subcontractors, materials suppliers and others providing any work or services in connection with the Project, who arrive at the Project Site during hours when the School is in session, shall check in at the School's administrative office before otherwise entering in and upon the Project Site, and School staff shall escort all such persons to the locations on the Project Site where they are required and/or permitted to be in connection with the Work.

7.4 Regardless of whether the District authorizes any particular Work or deliveries to occur during School hours, the employees of the Contractor, its subcontractors, materials suppliers and others providing any work or services in connection with the Project must enter the School grounds and travel to the Project Site using only the designated entry gate and path of travel as directed by the District. If applicable, the Contractor must sign for and obtain from the District a key for such designated gate. The Contractor must return such key (and all copies of such key) to the District upon completion of the Project.

7.5 At no time shall the employees or other personnel of the Contractor, its subcontractors, materials suppliers or others providing any work or services in connection with the Project be in the vicinity or in the presence of any student or students at the School unless a member of the School or District staff is also present.

8. ***Employee Background Checks.*** If this Section INITIALLY DOES NOT require that the Contractor comply with Section 3.7 of the General Provisions, the District reserves the right in appropriate circumstances to subsequently require that the Contractor comply with Section 3.7 of the General Provisions, including, without limitation, if performance of any Work will occur after the initially specified Contract Time. The Contractor (check only one of the following):

☐ Shall comply with Section 3.7 of the General Provisions.

☑ Initially is not required to comply with Section 3.7 of the General Provisions.

9. ***Field Office and Restroom Requirements.*** The Contractor must furnish any and all necessary field offices and restrooms for the Project. The District will NOT provide field restrooms for the Project, and IN NO EVENT SHALL ANY CONTRACTOR OR SUBCONTRACTOR PERSONNEL ACCESS OR ENTER INTO ANY OF THE EXISTING RESTROOMS AT THE PROJECT SITE.

10. ***Dust Control.*** The Contractor, at its own expense, shall undertake reasonable dust-control measures to prevent dust and other particulates attributable to the Work from leaving the

Project Site, which measures shall include, but not be limited to, appropriate application of water or other approved dust palliative.

11. ***Contractor General Liability Insurance.*** The General Liability Policy described in Section 10.1 of the General Provisions must have coverage limits not less than the following:

Per occurrence (combined single limit)	$1,000,000
Project specific aggregate	$2,000,000
Products-completed operations	$1,000,000
Explosion, collapse & underground (XCU)	$1,000,000
Personal & advertising Injury	$1,000,000
Materials hoist (if applicable)	$1,000,000

12. ***Contractor Vehicle Liability Insurance.*** The Vehicle Liability Policy described in Section 10.2 of the General Provisions must have coverage limits of not less than $1,000,000 combined single limit per occurrence and $1,000,000 aggregate.

13. ***Builder All-Risk Insurance.*** Section 10.5 of the General Provisions shall (check only one of the following):

☐ Be in effect or apply to the Contract.

☑ NOT be in effect or apply to the Contract.

14. ***Subcontractor General Liability Insurance.*** Each subcontractor must have general liability insurance in effect as provided in Part 10 of the General Provisions, with coverage limits of not less than $1,000,000 combined single limit per occurrence and $1,000,000 aggregate.

15. ***Subcontractor Vehicle Liability Insurance.*** Each subcontractor must have vehicle liability insurance in effect as provided in Part 10 of the General Provisions, with coverage limits of not less than $1,000,000 combined single limit per occurrence and $1,000,000 aggregate.

16. ***DVBE Participation***. With respect to the DVBE requirements set forth in the Instructions for Bidders and the General Provisions, the Contractor is (check only one of the following):

☐ Required to comply with such requirements.

☑ NOT required to comply with such requirements.

DVBE Advertising. If the foregoing paragraph indicates that compliance with DVBE requirements is required, the advertisements for DVBE shall be placed by (check only one of the following): NA

☐ the District

☐ the Contractor

17. ***Sole Source Items***. The District Board has found that, for reasons authorized pursuant to Public Contract Code Section 3400, the equipment, materials, and/or other things described in this Section are specified as sole-source items (each a "Sole Source Item") and the Contractor must provide the exact Sole Source Item specified, not an "equal" or substitute item. The Sole Source Items include: N/A

18. ***Retention***.

(i) Based on the foregoing the District has determined that Retention shall equal five percent (5%).

GENERAL PROVISIONS

PART 1. ADMINISTRATIVE.

Section 1.1 Definitions. Each capitalized term that is defined in any of the Contract Documents shall have such meaning for purposes of all of the Contract Documents, despite not being defined in any other of the Contract Documents.

Section 1.2 Authority of District Representative. The District Representative shall have the authority for general supervision and control of the Work and the Project. The District Representative has the authority to determine the amount, quality, acceptability and fitness of all parts of the Work, and to decide all questions pertaining to the Work, except to the extent that the Architect is responsible for answering such questions. The District Representative shall have authority to stop any or all of the Work whenever, in the District Representative's opinion, the Project or the Work is not being executed in accordance with applicable requirements or in a proper manner.

Section 1.3 District's Inspector. The District may contract with a DSA-approved inspector and one or more specialty inspectors (each an "Inspector") to observe and review some or all of the Work, and who will act as representatives of the District. Such observation and review by any Inspector shall not, in any way, relieve the Contractor from responsibility for full compliance with all of the terms and conditions of the Contract, nor be construed to lessen to any degree the Contractor's responsibility for providing efficient and capable supervision as required herein. The Inspectors are not authorized to make changes to the Plans, Specifications, or other Contract Documents, and no observation, review, or approval of work and/or methods by any Inspector shall be deemed or construed to relieve the Contractor of responsibility for the correction of any subsequently discovered defects.

Section 1.4 Extra Services of District Representative or Inspector. The Contractor and/or its surety, if applicable, shall reimburse the District in the event the District incurs any costs or expenses (including, without limitation, costs for services of the District Representative, the Architect, other consultants, Inspectors, legal counsel, and/or expert witnesses) in connection with: (i) enforcement of any guarantee or warranty for any portion of the Work; (ii) litigation related to or arising out of the Contract or the Work; (iii) correction of defects or poor quality workmanship in the Work; and/or (iv) completion of the Work by the surety or, if applicable, the District. The Contractor or its surety, if applicable, shall reimburse any such amounts to the District with reasonable promptness, but in no event later than forty-five days after receipt of an invoice from the District and documentation, if any, reasonably evidencing the invoiced amount(s). In no event shall the District be required to disclose any narratives describing legal services provided to or on behalf of the District.

Section 1.5 Separate Contracts. The District reserves the right to award any other contract(s) in connection with the Project for work and/or services not included in the Contractor's scope of work, and the work to be completed pursuant to such contract(s) may proceed simultaneously with the execution of the Work by the Contractor. The Contractor shall coordinate its operations with those of all other contractors on the Project. The Contractor shall cooperate with the District and other contractors with respect to all aspects of the overall work necessary to complete the Project, including storage of equipment and materials. The Contractor and its subcontractors shall remain informed of the progress and the detail work of other contractors and shall immediately notify the District Representative of any reasonably apparent lack of progress or defective workmanship on the part of other contractors, as such delay or such defective workmanship may interfere with the completion of the Work. Failure of the Contractor to remain informed of the progress of work on the Project and/or

failure to give notice of any reasonably apparent lack of progress or defective workmanship by others shall be deemed to be acceptance by the Contractor of that work as being satisfactory for proper coordination with the Work and to be a waiver by the Contractor of any delays arising from that work by others.

Section 1.6 Ownership of Contract Documents. All copies of any Contract Documents, including Plans and Specifications, for the Work and the Project are and shall remain the property of the District. The Contractor shall not use or allow the use of the Contract Documents or any portion or provision thereof in connection with any work other than the Work. With the exception of one set of the signed Contract and other Contract Documents to be retained in the Contractor's records if desired by the Contractor, all copies of all Contract Documents are to be returned to the District upon completion and acceptance of the Work.

PART 2. CONTRACTOR'S PERFORMANCE.

Section 2.1 Independent Contractor Status. The Contractor shall, for all purposes of the Contract, be deemed to be an independent contractor. The Contractor shall not be deemed or construed to be an officer, employee, agent, consultant or representative of the District for any purpose related to the Work or the Project, except to the extent expressly authorized in writing by the District.

Section 2.2 Standard of Performance. The Contractor represents and warrants that it has the professional skill, knowledge, and experience necessary to perform and complete the Work within the time required pursuant to the Contract. The Contractor shall apply such skill, knowledge and experience in the completion of the Project, at a minimum level at least equal to that expected generally of professionals employed in construction of public schools within the State of California. The Contractor shall perform and complete the Work, at minimum, in accordance with: (i) applicable laws, rules, regulations, ordinances, and other governmental requirements; (ii) industry and trade association standards; (iii) applicable manufacturers' recommendations; and (iv) if any, community or area standards. The Contractor represents and warrants that each and all of its employees and subcontractors shall have sufficient skill, knowledge, and experience to perform the Work that will be assigned to them.

Section 2.3 Licenses. The Contractor represents and warrants that it currently has, and that it shall maintain until completion and acceptance of the Project, any and all contractor licenses, permits, qualifications, and other approvals of whatever nature as are legally required for the Contractor to perform the Work required pursuant to the Contract and to complete the Project. The Contractor further represents and warrants that it currently has, or that, prior to commencing the Work it will obtain, any and all business licenses that must be obtained from any local governmental entities. This Section shall be deemed and construed to relate to authorizations of the Contractor, and not authorizations of the Work, which are covered by Sections 5.1 and 5.2 of these General Provisions.

Section 2.4 Solicitation of Contract. The Contractor hereby represents and warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor or its subcontractor(s), to solicit or secure the Contract on behalf of the Contractor. The Contractor also hereby represents and warrants that it has not paid, and has not agreed to pay, any company or person, other than a bona fide employee working solely for the Contractor or its subcontractor(s), any fee, commission, percentage, brokerage fee, gift or other consideration that is or was contingent upon the award of the Contract to the Contractor. Breach or violation of these

representations and warranties shall result in the District having the right to terminate the Contract without further obligation or liability to the Contractor.

Section 2.5 Conflicts of Interest. The Contractor represents and warrants that, except as provided by the Contract, it shall not give, accept, encourage or solicit any payment or other thing to or from any District Board member, officer or employee of the District, or otherwise do any act(s) that may result in any such person having a conflict of interests contrary to applicable federal, state, or local law.

Section 2.6 Project Records. The Contractor shall maintain all documents, books, papers, accounting records, computer files, and other information related to the Project and performance of the Work ("Project Records"), including, but not limited to, the Contract, the Plans and Specifications, Change Orders, submittals, cut-sheets, requests for information, daily reports, correspondence, permits, insurance policies, Certificates of Insurance, testing and inspection reports, the costs of administering the Contract, and safety records. The Contractor shall keep such accurate and comprehensive Project Records as are: (i) necessary for proper administration and performance of the Work; and (ii) required by law or the Contract. All Project Records, as applicable, shall be maintained in accordance with generally accepted accounting principles. In accordance with Government Code Section 8546.7, the State of California has the right to examine, review, audit and/or copy the Project Records during the three-year period following final payment to the Contractor pursuant to the Contract. In addition, the District, DSA, SAB and OPSC each hereby has the right to examine, review, audit and/or copy the Project Records during the four-year period following final payment to the Contractor pursuant to the Contract. Therefore, the Contractor shall make the Project Records available at its offices at all reasonable times during the performance of the Work and for four years from the date of final completion or filing of a Notice of Completion for the Project, whichever is later. However, if any audit is commenced within such four-year period, the Contractor shall make the Project Records available at all reasonable times until proceedings related to such audit are complete and all statutes of limitation related thereto have expired. In the event the District notifies the Contractor that federal funds have been used in connection with the Project, the Contractor shall retain and make available the Project Records for such longer period as may be required by federal law.

Section 2.7 Damages Incurred by District Pursuant to Other Contracts. Notwithstanding anything to the contrary, if the District is required, pursuant to any other contract entered into by the District in connection with the Project, to pay any damages (whether liquidated pursuant to such other contract or otherwise) and/or costs (whether fixed by a court of competent jurisdiction or otherwise), and the District would not have been responsible for such damages and/or costs but for an act or omission for which the Contractor is responsible, then the District may seek indemnification from the Contractor pursuant to Part 10 of these General Provisions and/or may pursue such other remedies as are permitted by law and/or the Contract.

PART 3. EMPLOYEES AND SUBCONTRACTORS.

Section 3.1 Job Superintendent. The Contractor shall have present on the Project Site at all times during the course of the Work an experienced and competent superintendent and any necessary assistants, all satisfactory to the District, who shall supervise the Work and the Contractor's employees and subcontractors on the Project. The job superintendent shall not be changed except with the written consent of the District, unless the Contractor determines that the job superintendent's performance is unsatisfactory or in the event the job superintendent is no longer employed by the Contractor. If the District determines that the performance of any job superintendent or assistant is, for any reason, not satisfactory, the Contractor must promptly replace the job superintendent or assistant with someone

reasonably acceptable to the District. The Contractor shall not thereafter suffer or permit any such person to perform any of the Work or to be present on or at the Project Site. The job superintendent shall represent the Contractor and all instructions given to the job superintendent shall be as binding on the Contractor as if given to the owner(s) or other primary representative(s) of the Contractor. Upon request of the District, the Contractor shall confirm in writing to the District any oral instructions given to the Contractor through its job superintendent.

Section 3.2 Contractor's Employees. The employees of the Contractor shall at all times be under the Contractor's exclusive direction and control with respect to the Project. The Contractor shall pay all wages, salaries, and other amounts due to such personnel in connection with their performance of the Work, as required by law. Contractor shall be responsible for all reports and obligations respecting such personnel, including, but not limited to: social security taxes, federal and state income tax withholdings, unemployment insurance, and workers' compensation insurance. The Contractor shall employ only competent workers for execution of the Work and shall not employ any person who is unfit or unskilled in the work assigned to him or her. The Contractor shall at all times enforce strict discipline and good order among its employees and any and all subcontractors' employees performing any portions of the Work. The Contractor shall supervise and control its employees and all subcontractors' employees performing any portions of the Work to ensure adequate performance and discipline. The Contractor shall immediately remove from the Project and Project Site any person, regardless of whether employed by the Contractor or any subcontractor, who is determined by the District to be uncooperative, incompetent, or a threat to the safety of persons or the Work, or who fails or refuses to perform the Work in a manner consistent with the requirements of the Contract Documents. The Contractor shall not thereafter suffer or permit any such person to perform any of the Work or to be present on or at the Project Site.

Section 3.3 Prohibition Against Unlawful Discrimination. The Contractor represents and warrants that it is an equal opportunity employer and that it shall not discriminate in violation of any applicable federal, State of California, or other law, rule, regulation, or governmental requirement, including, but not limited to discrimination against any employee or applicant for employment on account of such person's race, religion, color, national origin, ancestry, sex, or age. The Contractor must apply such policy of non-discrimination in connection with all activities related to initial employment, promotion, demotion, transfer, recruitment or recruitment advertising, layoff or termination of Contractor's employees or any subcontractors.

Section 3.4 Subletting and Subcontracting Fair Practices Act. The Contractor shall comply with all provisions of the "Subletting and Subcontracting Fair Practices Act" set forth at Public Contract Code Section 4100 *et seq.* The Contractor shall not subcontract any portion of the Work except as indicated in its Bid Proposal. If the Contractor failed to identify in its Bid Proposal a subcontractor for any portion of the Work in excess of one-half of one percent of its total bid, or if the Contractor identified more than one subcontractor for the same portion of work to be performed pursuant to the Contract, the Contractor agrees that it is fully qualified to perform, and the Contractor shall perform, that portion of the Work with its own forces, not by using any subcontractor(s).

Section 3.5 Responsibility for Subcontractors. The Contractor shall be responsible for any and all acts, errors, and omissions of its subcontractors performing any work or services in connection with the Project. The Contractor shall also be responsible for ensuring that all portions of the Work performed by its subcontractors conform with all requirements of the Contract Documents and applicable law. The Contractor shall immediately remove from the Project and Project Site any subcontractor that the District determines is uncooperative, incompetent, or a threat to the safety of

persons or the Work, or that fails or refuses to perform the Work in a manner consistent with the requirements of the Contract Documents. The Contractor shall not thereafter suffer or permit any such subcontractor or any of its employees to perform any of the Work or to be present on or at the Project Site.

Section 3.6 Subcontractor Insurance. The Contractor shall ensure and verify that its subcontractors obtain and maintain all necessary liability and other insurance as required pursuant to the Contract Documents and/or by law.

Section 3.7 Background Checks.

Subsection 3.7.1 General Statutory Requirements. California Education Code Section 45125.1 ("Section 45125.1") requires that each entity having a contract with a local educational agency ("LEA") shall ensure that each of the personnel interacting with students outside of the immediate supervision and control of the student's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237. In addition, the contracting entity shall immediately provide any and all subsequent arrest and conviction information it receives to the LEA. Section 45125.1 authorizes LEA's to require compliance with the requirements for personnel other than those directly employed by the contracting entity.

Subsection 3.7.2 Applicability of Background Check Requirements. The Contractor shall initially be required to comply with this Section 3.7 only if so specified in the Special Provisions. However, notwithstanding anything to the contrary, if the Special Provisions do not require compliance with this Section 3.7, the District, in its reasonable discretion, subsequently may require that the Contractor comply with this Section 3.7, including, without limitation, in the event of any delay in completion of the Work making it more likely that students will be present during Project-related activities occurring at the Project Site

Subsection 3.7.3 Contractor Obligations Generally. Because students may be present when Project-related activities occur at the Project Site, and because there will in most instances be no corresponding "immediate supervision," the Contractor, in connection with such activities, shall comply in all respects with Section 45125.1. Without limiting the foregoing, Contractor, at its sole cost and expense, and without additional compensation from the District, must comply with all California Department of Justice guidelines and requirements with respect to fingerprinting of the personnel who, in connection with the Project, will be present at the Project Site.

Subsection 3.7.4 Certification of Compliance. The Contractor shall certify in writing to the District, using the "Certification Regarding Employee Background Checks" form, which is one of the Required Contract Forms, that no person assigned to the Work or who otherwise will be present at, on, or in the vicinity of any District school in connection with the Work has been convicted of any serious or violent felony as described in Education Code Section 45122.1. Education Code Section 45122.1 defines a violent felony as any felony listed in subdivision (c) of Penal Code Section 667.5, and a serious felony as any felony listed in subdivision (c) of Penal Code Section 1192.7. The Contractor must attach to the written certification a list of all persons to whom the certification applies.

Subsection 3.7.5 Presence Prohibited Unless Certified. The Contractor shall prohibit and prevent each and every person who will be at, on, or in the vicinity of any District school in connection with the Work (including, without limitation, employees of each subcontractor) from being

present at, on, or in the vicinity of the District's schools unless and until the Contractor provides to the District the required certification that applies to such person.

Subsection 3.7.6 Responsibility for Subcontractor Compliance. The Contractor shall require in each of its subcontracts that, if the subcontractor will assign any person to the Work or otherwise will cause or permit any person to be present at or on the Project Site, the subcontractor must cooperate in regard to, and fully comply with, the requirements of this Section 3.7. The Contractor may on that basis delegate responsibility for compliance with this Section 3.7 to any such subcontractor; however, the Contractor at all times retains full responsibility and/or liability for such compliance or lack thereof.

Subsection 3.7.7 Alternatives to Background Checks. Upon request of the Contractor with respect to any particular situation and/or duration of time, the District in its sole discretion may consent to the Contractor implementing measures intended to protect the District's minor-aged students, which measures would be in lieu of the Contractor complying with the foregoing provisions of this Section 3.7. Subject to District approval, such alternative measures might include, but are not necessarily limited to: (i) installing a physical barrier to limit contact between students and the employees and other representatives of the Contractor, subcontractors, and others present on or at the Project Site on account of the Work; (ii) providing for the continuous supervision and monitoring of such employees, representatives and others by an employee of the Contractor who has received fingerprint clearance from the California Department of Justice; or (iii) providing for the surveillance of such employees, representatives and others by a District employee. The Contractor must implement any such approved alternative measures at no additional cost to the District, and the Contractor shall be responsible for ensuring compliance with such alternative measures by or with respect to all persons assigned to the Work or who otherwise will be present at, on or in the vicinity of the Project Site on account of the Work.

Subsection 3.7.8 Consequences of Non-Compliance with Requirements. Due to the possible adverse consequences of contact with students and other minor-aged individuals, any failure by the Contractor to ensure compliance with the requirements of this Section 3.7 shall be deemed and construed to constitute a material breach of the Contract, upon which the District, in its sole discretion, may immediately terminate the Contract without any further compensation to Contractor and/or pursue all other rights and remedies it may have against the Contractor pursuant to law or the Contract.

PART 4. PLANS AND SPECIFICATIONS.

Section 4.1 Errors, Inconsistencies, and/or Omissions in Contract Documents. The Contractor shall carefully study and compare all of the Contract Documents and requirements therein, and be adequately familiar with the same as the Work commences and progresses. The Contractor shall immediately, upon discovery, inform the District Representative in writing of any error, inconsistency, omission, or other discrepancy in the Contract Documents. The District will notify the Architect of any such error, inconsistency, omission, or discrepancy. The Architect shall promptly investigate and/or verify the same. Unless and until authorized by the District, any of the Work affected by any such error, inconsistency, or omission that is performed by Contractor shall be at the Contractor's risk and/or cost.

Section 4.2 Conflict Between Plans and Specifications. In the event of any conflict between the requirements of the Plans and the requirements of the Specifications, the Plans shall govern with respect to matters of quantity, and the Specifications shall govern with respect to matters of quality. In the event of any conflict within such Plans involving quantities, or within such

Specifications involving qualities, the Contractor shall furnish the greater quantity and/or the higher quality, unless directed to do otherwise, in writing, by the District Representative and/or Architect.

Section 4.3 Titles and Headings in Contract Documents. The titles and/or headings of the sections, divisions and paragraphs set forth in the technical specifications, if any, are provided for convenience only and shall not be deemed or construed as a correct or complete segregation of the several units of material and labor. No responsibility, either direct or implied, will be assumed by the District for errors, omissions, or duplications by the Contractor or its subcontractors resulting from actual or alleged error in the arrangement or order of the provisions set forth in the Contract Documents.

Section 4.4 Shop Drawings.

Subsection 4.4.1 Advance Approval Required. The Contractor must, in accordance with the procedures set forth in this Section, submit for the approval of the Architect all shop and setting drawings, samples, and other submittals (each a "Shop Drawing") required pursuant to the Contract Documents or that are requested by the Architect. If the Contractor completes any portion of the Work included in or affected by the subject matter of any Shop Drawing prior to receipt of the Architect's approval of such Shop Drawing, all such Work shall be at Contractor's own risk.

Subsection 4.4.2 Copies Required. Unless otherwise specified in the Contract Documents or by the Architect, the Contractor must submit six sets of all Shop Drawings, together with a letter of transmittal listing the numbers and dates of the Shop Drawings and/or other information submitted to the Architect. Any such Shop Drawings shall be complete in every respect and, where more than a single page, bound in sets.

Subsection 4.4.3 Timely Submittal. The Contractor must submit each and all Shop Drawings in a timely manner, with adequate consideration given to construction scheduling requirements so as to allow ample time for checking, correcting, resubmitting, and rechecking of any Shop Drawing by the Architect.

Subsection 4.4.4 Review and Approval in Advance by the Contractor. The Contractor must review each Shop Drawing prior to submittal to the Architect, including, without limitation, for conformance with all requirements of the Contract Documents. All Shop Drawings submitted for approval by the Architect must be marked with the name of the Project, numbered consecutively, and bear the stamp of approval or signature of the Contractor as evidence that the Contractor has reviewed and approved the Shop Drawings. The Architect will not accept or review Shop Drawings that do not bear the Contractor's stamp of approval or signature, and shall return such Shop Drawings to the Contractor for re-submission.

Subsection 4.4.5 Identifying Variations from Contract Requirements. If, for any reason, any Shop Drawing varies from the requirements of the Contract Documents, the Contractor must specifically identify the variation, by "clouding" or other method that makes the variation apparent, and the Contractor must explain such variation in the letter of transmittal. Absent the Contractor so identifying and explaining a variation from the requirements of the Contract Documents, the Contractor shall not be relieved of the responsibility for performance of the Work in accordance with the Contract Documents, regardless of the fact that the Architect may have approved the applicable Shop Drawing.

Subsection 4.4.6 Approval of Variations from Contract Requirements. Subject to the Contractor's compliance with Subsection 4.4.5, above, the Architect may approve any Shop Drawing that varies from the requirements of the Contract Documents if such variation: (i) does not require any increase in the Contract Amount and/or Contract Time; (ii) does not affect the longevity, use or maintenance of the completed Work; and (iii) approval would be in the District's best interests.

Subsection 4.4.7 Interpretation of Architect Approval. Architect approval of Shop Drawings shall be deemed a "general" approval and, except as otherwise provided in Subsection 4.4.6, above, shall not be construed: (i) to permit any variation between the Work as performed and the requirements of the Contract Documents; (ii) to relieve the Contractor of responsibility for any error(s) that may exist in the details, dimensions, or other information set forth in any Shop Drawing; or (iii) as approval of variations between the Work as performed and details or instructions for the Work previously provided to the Contractor by the District Representative.

Section 4.5 Interpretation of Documents. The District and/or Architect shall resolve any and all questions regarding interpretation of the Contract Documents and/or the workmanship, scope, value or other matters related to the Work performed or to be performed pursuant to the Contract Documents. In each such case, and for purposes of the Contract, the determination by the District and/or Architect shall be conclusive. For avoidance of doubt, words in any of the Contract Documents that are set forth in all-capital (or uppercase), bold, and/or highlighted font: (i) shall be deemed and construed to be for the convenience of the reader; and (ii) SHALL NOT be deemed or construed to obviate or limit the importance or applicability of, or otherwise qualify, any other words set forth in any of the Contract Documents.

PART 5. WORK AND SITE CONDITIONS.

Section 5.1 Work Permits and Licenses. Except as provided in Section 5.2 of these General Provisions, the Contractor shall obtain, at its own expense, any and all permits, licenses and other authorizations necessary for the performance of the Work, including, but not limited to, any required construction permits, Cal-OSHA safety-related permits, storm water permits, and utility-connection permits.

Section 5.2 Building Permits and Permanent Utility Connections. Notwithstanding Section 5.1 of these General Provisions, the District shall procure and pay for any and all building permits and permits for permanent utility connections that must be obtained from the DSA, local building officials or utility company, to the extent required by law or obtained by the District in its discretion. Except for the initial building permit, the Contractor must give written notice to the District a reasonable amount of time in advance of when any such permit will be required, to prevent any associated delays in the performance of the Work or completion of the Project.

Section 5.3 Construction Schedule.

Subsection 5.3.1 Development and Approval. During the Mandatory Preconstruction Conference, and without limiting other purposes of that conference, the Contractor shall submit to the District Representative, for review by the District and its consultants, a schedule for completion of the Work and all major components thereof, which shall include the "critical path" for such Work and shall be consistent with the Work of any other contractors on the Project and the Master Schedule. The District, at the Mandatory Preconstruction Conference or upon completing review of the schedule thereafter, may: (i) approve the construction schedule; or (ii) reject the construction schedule as

unreasonable or inconsistent with the Master Schedule. If the District rejects the construction schedule, then, promptly following rejection, but not more than three business days thereafter, the Contractor shall revise the construction schedule as necessary to resolve the identified issues, and shall resubmit the schedule to the District, and the District and its consultants shall review the revised construction schedule. If and when the District approves the construction schedule, it shall be incorporated into (or, as determined by the District, shall replace and become) the Master Schedule. However, approval of a construction schedule by the District shall not be construed as verifying or approving the logic or feasibility of the schedule.

Subsection 5.3.2 Compliance with Master Schedule. The Contractor shall comply, and shall ensure that its employees and subcontractors are aware of and comply, with the approved Master Schedule. Any float in the Master Schedule shall be for the benefit of the Project, as determined by the District Representative, not for the benefit of the Contractor, any other prime contractor, or any of their subcontractors.

Subsection 5.3.3 Recovery Schedules. In the event the Work falls behind schedule, the Contractor, promptly, but in no event more than 48 hours following a request by the District, shall prepare and provide to the District a recovery schedule indicating the actions to be taken and the Work to be performed in order to bring the actual work performed into compliance with schedule requirements. Upon approval of the recovery schedule by the District, the Contractor must perform the Work in accordance with the recovery schedule to ensure conformance with the Master Schedule.

Section 5.4 Manpower Requirements. At any time prior to full and satisfactory completion of the Work, the District may determine in its reasonable discretion that the Contractor or any of its subcontractors is not employing sufficient manpower on the Work to complete the Work or any component thereof within the scheduled amount of time. In such event, within forty-eight hours of any request by the District, the Contractor shall provide such additional manpower, or shall ensure that the subcontractor provides such additional manpower, as the District determines is necessary to ensure completion of the Work in a timely manner. Any failure by the Contractor or subcontractor upon the District's request to provide such additional manpower as is required by the District shall constitute grounds for termination of the Contractor and/or the subcontractor. As an alternative to termination, the District, in its sole discretion, may determine to supplement the workforce of the Contractor or the subcontractor in order to ensure timely completion of the Work, and the cost thereof shall be deducted from amounts due to the Contractor pursuant to the Contract, and no such action by the District shall be deemed or construed to constitute interference by the District with the Contract or the Contractor's right to perform the Work.

Section 5.5 Liquidated Damages. Time is of the essence with respect to the Contract and completion of the Work. The Parties acknowledge and agree that: (i) the District will suffer damages if the Contractor does not complete the Work within the time provided pursuant to the Contract; and (ii) in such event, it will be impractical and infeasible to determine the actual amount of damages the District will incur. Therefore, in accordance with Government Code Section 53069.85, the Contractor shall pay to the District liquidated damages at the rate specified in the Special Provisions for each and every calendar day (or portion thereof if not a full day) that the Work or any portion thereof remains uncompleted and not accepted by the District after the time provided pursuant to the Contract, as such time may be modified in accordance with the Contract ("Liquidated Damages"). Liquidated Damages shall constitute compensation to the District for Contractor's delay or delay caused by its subcontractors, suppliers, *et cetera*, in completion of the Work and shall not be construed as a penalty or forfeiture of any other right or remedy under the Contract or law. In the event the Contractor fails to

pay any such Liquidated Damages, the District may deduct such amount(s) from any payments due (or that may become due) to Contractor pursuant to the Contract. Nothing in this Section shall be deemed or construed to preclude the District from recovering other or additional damages, as provided by the Contract or applicable law, attributable to any breach or default by the Contractor of its obligations pursuant to the Contract.

Section 5.6 Extension of Time. Subject to the other provisions of this Section, District shall extend the time for completion of the Work, by such number of days determined by the District in its reasonable discretion, in the event Contractor's progress on the Work is delayed as a result of: (i) an unreasonable act or omission of the District, not contemplated by the District and the Contractor; (ii) an act or omission of any other prime contractor on the Project not consistent with the Contract Documents; (iii) Changes in the Work required by the District for reasons other than those caused by, or the fault of, the Contractor; (iv) strike or lockout not instigated by the Contractor or an affected subcontractor; (v) unusual and severe interruption in interstate or intrastate, but not local or regional, transportation; (vi) earthquake, flood, or other unavoidable casualty that is not the fault of Contractor or a result of Contractor's actions or work; or (vii) any other cause determined by the District to justify an extension of time. **AS A CONDITION PRECEDENT TO THE DISTRICT'S OBLIGATION TO GRANT ANY SUCH EXTENSION OF TIME, THE CONTRACTOR MUST PROVIDE WRITTEN NOTICE OF THE DELAY TO THE DISTRICT WITHIN FIVE CALENDAR DAYS OF WHEN THE DELAY COMMENCED.** No extension of time shall be granted for delay occurring more than five days prior to when the notice of delay is submitted in writing to the District. In the case of a continuing cause of delay, only one notice shall be necessary, but the Contractor must apprise the District on a regular basis (not less than once per week) as to the status of the delay and, also, at such time as the cause of the delay has been resolved and the affected portion of the Work has resumed. The purpose of the notice requirements of this Section are to ensure that the District has an opportunity at the earliest possible time to mitigate and resolve delays in the Project.

Section 5.7 Workmanship and Materials. The Contractor shall employ nothing less than good quality workmanship in performing the Work. All materials, equipment and other items incorporated into the Work shall be of good quality and, unless specified otherwise, shall be new. The Contractor shall, upon request, provide satisfactory evidence as to the type and quality of materials used in connection with the Work. If the Contractor determines that the materials delivered to the Project Site do not represent a good quality product, it shall advise the District Representative, and shall remedy the deficient quality as quickly as possible with the shortest delay, if any, to the Work on the Project, unless otherwise instructed by the District Representative.

Section 5.8 Substitutions of Materials and Equipment. The Contractor shall use and/or incorporate into the Work on the Project all materials and equipment as are specified in the Contract Documents, except upon approval by the District Representative or Architect of the substitution of "equal" materials or equipment. No substitutions shall be accepted unless and until the Contractor requests and receives permission in writing from the District Representative or Architect. All requests for substitution shall be made concurrently to the District, the District Representative and the Architect. The Contractor must have submitted any requests for substitution and all information in substantiation of such request not later than twenty-four hours after the date and time scheduled for opening of bids. Notwithstanding the foregoing, the Contractor may submit a request for substitution after such deadline in the event a Specified Item has become commercially unavailable, i.e., is no longer manufactured or is available only for a manifestly unreasonable price. In connection with any such request, the Contractor shall present complete details of the "equal" item, with specific explanations of the characteristics of the details that differ from the specifications. The Contractor must expressly describe how a substitute item will differ from the Specified Item, including without limitation, compliance with applicable building and

other codes, and the Contractor shall to that extent be responsible for compliance with all specifications, codes, *et cetera*, regardless of any District or Architect approval of the substitution request. The District Representative and/or Architect for the Project shall investigate the characteristics of the proposed "equal" item and the merits of the proposed substitution, and shall notify the Contractor of the determination. The determination of the District Representative or Architect as to whether a proposed substitute material, equipment, or other item is "equal" shall be final.

Section 5.9 Contractor's Title to Materials. Neither the Contractor nor any subcontractor on the Project shall purchase materials, equipment, supplies or other items for use on, or incorporation into, the Work subject to any chattel mortgage or under a conditional sale or other agreement pursuant to which an interest is retained by the seller. The Contractor represents and warrants that it shall have good, free and clear title to all materials, equipment, supplies, or other items for which the Contractor accepts any payment from the District.

Section 5.10 Tests and Inspections. Materials, fabrication, and erection shall be tested and inspected as required by Title 21 of the California Code of Regulations and when required by the District Representative or Inspector. The cost of all such tests and inspections shall be paid by the District, except that the Contractor shall reimburse the District for (or compensation to the Contractor shall be reduced by an amount equal to) the costs of retests or re-inspections of Construction, materials, equipment and other components of the Work that prove to be defective, inadequate, or inconsistent with the requirements of the Contract Documents.

Section 5.11 Materials Testing. The Contractor shall deliver to the District Representative upon request, without charge to the District, and properly marked for identification purposes, all material test samples or specimens that are required pursuant to the Contract Documents. The Contractor shall pay all costs incurred in preparing, wrapping, protecting, transporting and/or mailing of required samples or specimens.

Section 5.12 Inspection of Manufactured Items. The Contractor must ensure that the District shall at all reasonable times have access to all places where materials, equipment, machinery, or other items for incorporation into the Work are being manufactured, produced, or fabricated for use on or incorporation into the Project. The District shall be permitted such access as will allow a determination regarding whether such materials, equipment, machinery or other items are being manufactured in strict accordance with the Contract Documents. The Contractor shall, upon request, provide the District Representative with access to all invoices, bills of lading, *et cetera*, and shall provide scales for, and/or other equipment and assistance with, weighing, measuring, or otherwise evaluating any of the materials.

Section 5.13 Surveys. The District, if reasonably required, will establish the boundary lines of the Project Site and all easements thereon. The Contractor shall preserve all existing bench marks and property or survey stakes, markers, or monuments as they exist in the field. The Contractor shall be responsible for each disturbance, removal or covering of any such bench marks, stakes, markers or monuments, and shall reimburse to the District (or compensation to the Contractor shall be reduced by the amount of) the actual cost and expenses incurred in restoring or replacing the same.

Section 5.14 Access to Work. The District, including, without limitation, the Architect, District Representative and Inspector, shall at all times and for any purpose have unrestricted access to the Work on the Project, including any areas used by the Contractor or its subcontractor(s). Each public authority with jurisdiction over the Project shall at all times have unrestricted access to the Work on the

Project, including any areas used by the Contractor or its subcontractor(s), for purposes within that public authority's jurisdiction. The Contractor shall not impede or frustrate any access to or inspection of the Work, including inspection of the materials and the workmanship used in connection with the Work. The Contractor shall take all reasonable steps to facilitate any such access or inspection of the Work, including providing any equipment or other accommodations necessary or convenient for such access or inspection.

Section 5.15 Testing and Inspection of Work. Testing and inspection of portions or elements of the Work, or of materials, equipment or other items to be incorporated into the Work, will be required pursuant to the Contract Documents, Inspector's instructions, applicable laws, ordinances and regulations, or by public authorities. **THE CONTRACTOR MUST GIVE WRITTEN NOTICE OF ITS READINESS FOR ANY SUCH TESTING OR INSPECTION, TO THE INSPECTOR AND THE DISTRICT, AT LEAST FORTY-EIGHT HOURS PRIOR TO WHEN THE INSPECTION IS OR WILL BE SCHEDULED TO OCCUR.** If the inspection is to be conducted by a public authority or person other than the Inspector, the notice to the Inspector shall also specify the date and time at which such inspection is to occur. If the Contractor, without prior approval, covers or renders inaccessible the portion or element of the Work, or the material, equipment or other item, that is to be tested or inspected, the Contractor, at its own expense and upon request of the Inspector, shall remove or demolish all portions of the Work as are necessary to facilitate such testing or inspection. The Contractor must give notice of any cancellation of a scheduled inspection at least twenty-four hours prior to when the inspection is scheduled to occur.

Section 5.16 Protection of Work. The Contractor and its subcontractor(s) shall protect the Work and any portions of the Project affected thereby from harm and are responsible under all circumstances for the conditions thereof until final acceptance of the Project by the District. The Contractor and its subcontractor(s) shall protect adjacent property from injury or damage arising out of the Contractor's performance of the Work on the Project and shall repair or pay the cost of repairing any such damage or injury that occurs.

Section 5.17 Protection of Project Site. The Contractor shall protect all structures, walks, pipelines, utilities, trees, shrubbery, furniture, and all other items on and in the vicinity of the Project Site that may possibly be damaged or otherwise adversely affected during the performance of the Work.

Section 5.18 Damages to Other Contractors. In the event any other contractor or subcontractor working on the Project incurs damage(s) as a result of any act or omission of the Contractor or its subcontractor(s) that is unreasonable or not consistent with the Contract Documents, the Contractor shall make good-faith efforts to effect a settlement with the other contractor. If no such settlement is reached, and if any party commences an action or other proceeding against the District related thereto, the Contractor shall indemnify, defend, and hold-harmless the District in accordance with Section 10.16 of these General Provisions.

Section 5.19 Cleanup and Storage. The Contractor shall ensure that the area of the Project Site in which the Work occurs is at all times, including nights and weekends, free of loose or accessible waste, materials, tools, and equipment. The Contractor shall maintain the area of the Work and the Project, including grounds and sidewalks, in a safe, neat, and clean manner that will cause the least inconvenience to the District and, as applicable, the general public, school staff, and students. The Contractor shall comply with all instructions from the District Representative with respect to conditions at the Project Site, including, without limitation, instructions regarding removal of rubbish and debris generated by, and any unnecessary materials, tools, equipment or temporary structures owned or used by, the Contractor or its subcontractors. In the event the Contractor fails to comply with any such

instruction, the District Representative may arrange for removal and the Contractor shall pay to the District (or the Contractor's compensation shall be reduced by the amount of) the actual costs of such removal. Storage of materials on the Project Site shall be under the supervision of the District Representative, but at the expense, if any, of the Contractor.

Section 5.20 Safety.

Subsection 5.20.1 Contractor Obligation Generally. Contractor shall perform the Work in such manners, and shall maintain the Work in such conditions, as will prevent injury to any person (including, without limitation, District employees, students, visitors and others) and damage to any property. In carrying out the Work, the Contractor and its employees and subcontractors shall at all times be in compliance with all applicable federal, State of California and local laws, rules and regulations, and shall exercise all necessary precautions for the safety of employees appropriate to the nature of the Work and the conditions under which the Work is to be performed.

Subsection 5.20.2 IIPP and WVPP Requirements. Without limiting Subsection 5.20.1 herein or anything else, the Contractor shall at all times be in compliance with the requirements of: (i) Labor Code Section 6401.7, which relates to Illness and Injury Prevention Plans (each an "IIPP"); and (ii) Labor Code Section 6401.9, and related Cal-OSHA regulations set forth in Sections 1509 and 3203 of Title 8 of the California Code of Regulations, which relate to Workplace Violence Prevention Plans (each a "WVPP"). For all purposes of the IIPP and WVPP requirements, the Contractor shall be deemed and construed to be the "controlling employer" and shall be responsible and liable for any and all required: (i) training of employees; (ii) coordination with other employers and their employees; and (iii) receiving and logging of incidents of workplace violence. As between the Contractor and the District, the Contractor shall be solely responsible and liable for compliance with the IIPP and WVPP requirements and, in that regard, neither the District nor the Project Consultant: (i) shall in any event be deemed or construed to be a "controlling employer" with respect to employees or contracted workforces of the Contractor or any of its subcontractors, suppliers, or consultants; or (ii) have no responsibility whatsoever to review or determine the legal sufficiency or validity of any IIPP, WVPP, or related exemption or Cal-OSHA order, applicable to the Contractor, any subcontractor, or any other third party.

REGARDLESS OF WHETHER ANY INJURY TO ANY PERSON AND/OR INCIDENT OF WORKPLACE VIOLENCE THAT OCCURS ON, AT, OR IN THE VICINITY OF THE PROJECT SITE (each an "INCIDENT") INVOLVES OR WAS INSTIGATED BY ANY PERSON(S) FOR WHOM THE CONTRACTOR IS THE CONTROLLING EMPLOYER, THE CONTRACTOR, IN EACH CASE, SHALL: (i) AS SOON AS REASONABLY POSSIBLE AFTER THE INCIDENT OCCURS, TELEPHONICALLY NOTIFY THE DISTRICT AND, IF APPLICABLE, PROJECT CONSULTANT REGARDING THE INCIDENT; AND (ii) AS SOON AS REASONABLY POSSIBLE AFTER, BUT IN NO EVENT MORE THAN 24 HOURS AFTER, THE INCIDENT OCCURS, AND NOTWITHSTANDING ANY OTHER APPLICABLE REPORTING REQUIREMENT(S), PREPARE AND PROVIDE TO THE DISTRICT A REASONABLY DETAILED WRITTEN REPORT REGARDING THE INCIDENT.

Subsection 5.20.3 Safety Precautions and Clean-up Generally. Safety precautions for which the Contractor shall be responsible may include, but are not necessarily limited to: (i) adequate life protection and lifesaving equipment; (ii) adequate illumination for underground and night operations; (iii) instructions in accident prevention for all employees, such as machinery guards, safe walkways, scaffolds, ladders, bridges, gang planks, confined space procedures, trenching and shoring, fall protection and other safety devices; (iv) equipment and wearing apparel as are necessary or lawfully required to prevent accidents or injuries; and (v) adequate facilities for the proper inspection and maintenance of all safety measures. The Contractor shall take steps to ensure compliance with all safety

measures applicable in connection with particular operations or kinds of work, including sufficient safeguards, such as railings, temporary walks, lights, *et cetera*, as are necessary to prevent damage to any property and/or injuries to any person. The Contractor shall conduct such clean-ups of the area of the Work, including grounds and sidewalks, as are necessary to maintain the safety of the area of the Work, but in any event not less than once per day during the course of the Work.

Subsection 5.20.4 Emergencies. In the event of an emergency in which life or property are endangered, the Contractor shall take all reasonable actions to safeguard such life or property. The Contractor shall require that the job superintendent or others immediately call "911" each time a medical or other emergency occurs on or at the Project Site.

Subsection 5.20.5 Contractor Responsibility. The Contractor shall be fully responsible and liable in the event injury to person(s) and/or damage to property results from any unsafe or unprotected condition on or at the Project Site or otherwise associated with the Work that the Contractor is hereby required to protect against.

Section 5.21 Loss and Damage. Until such time as the Work is fully complete and accepted by the District, the Contractor shall be responsible for all losses and/or repair of all damages that may arise from or be a result of: (i) the nature of the Work agreed to herein; (ii) the action of the elements or environment; or (iii) any unforeseen difficulties that may arise or be encountered during the process of completing the Work. However, provided that the Work has been constructed in strict accordance with the Contract Documents, the Contractor shall only be responsible for damage proximately caused by Acts of God (as defined in Public Contract Code Section 7105) up to a maximum of five percent of the Contract Amount. In the event any such Act of God proximately causes damages in excess of five percent of the Contract Amount, the District, in its sole discretion, may terminate the Contract effective three days following written notice to Contractor.

Section 5.22 Regional Notification Center. If the Work involves any trenching, boring, tunneling, digging or other excavation, the Contractor shall be solely responsible and liable for compliance with all applicable requirements of Government Code Sections 4216 through 4216.9, and with all requirements of the CSLB relating to such Government Code provisions. The Contractor must, as required, obtain from the Regional Notification Center an Underground Service Alert identification number and must provide such identification number to the District. Prior to it expiring, the Contractor must contact the Regional Notification Center for any necessary revalidation of the identification number.

Section 5.23 Utility Removal, Relocation and Protection. In accordance with Government Code Section 4215, the District shall compensate the Contractor if the Plans and Specifications fail to identify any utility main- and trunk-lines on the Project Site and such failure results in additional costs to the Contractor related to: (i) locating and repairing damage to underground utility facilities not caused by the failure of the Contractor to exercise reasonable care; (ii) removing or relocating underground utility facilities not indicated in the Plans and Specifications with reasonable accuracy; and (iii) equipment necessarily idled during such work. The Contractor shall not be assessed Liquidated Damages for the delay caused by the failure of the District or the owner of the utility to provide for removal or relocation of such utility facilities. **THE CONTRACTOR SHALL IMMEDIATELY PROVIDE WRITTEN NOTICE TO THE DISTRICT IF, DURING THE COURSE OF THE WORK, THE CONTRACTOR DISCOVERS UTILITY FACILITIES NOT IDENTIFIED IN THE PLANS AND SPECIFICATIONS.**

Section 5.24 Trench Excavation. This Section shall apply to the Contract only if the Contract Amount exceeds $25,000 and the Work requires or involves excavation of any trench or trenches five feet or more in depth. The Contractor, in conformance with Labor Code Section 6705 and other applicable law, and prior to any such excavation, shall submit to the District for review and approval a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. The plan must be prepared by a registered civil or structural engineer and if the plan varies from the requirements of applicable Cal-OSHA Construction Safety Orders, the Contractor must obtain Cal-OSHA approval of the plan. Nothing in this Section, and no District or other approval of any plan prepared pursuant to this Section, shall relieve the Contractor of any responsibility, or result in District liability for hazards resulting from excavations performed by the Contractor.

Section 5.25 Subsurface Conditions. In accordance with Public Contract Code Section 7104, if the Work involves digging trenches or other excavations that extend deeper than four feet below the surface, **THE CONTRACTOR SHALL PROMPTLY, AND BEFORE THE FOLLOWING CONDITIONS ARE DISTURBED, PROVIDE WRITTEN NOTICE TO THE DISTRICT** of any: (i) material that the Contractor reasonably believes may be hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law; (ii) subsurface or latent physical conditions at the Project Site differing from those indicated by information about the Project Site made available to bidders prior to the deadline for submitting bids; or (iii) unknown physical conditions at the Project Site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the Contract. The District shall promptly investigate any such reported condition and, if warranted, shall issue a Change Order to the Contractor for any extra work or cost not covered by the Contract. In the event of any dispute between the District and the Contractor related to any such condition, the Contractor shall continue with the Work and shall not be excused from completing the Work within the time required pursuant to the Contract Documents; however, the Contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the Parties.

Section 5.26 Asbestos or Other Hazardous Materials. In the event the Contractor encounters on the Project Site any material that Contractor reasonably believes to be asbestos, polychlorinated biphenyl (PCB), any material listed by a federal or State of California environmental protection agency or health agency as a hazardous material, or any other material defined as being hazardous under federal or State of California laws, rules or regulations ("Hazardous Material") that has not been rendered harmless, Contractor shall immediately stop all Work in the area affected and report the condition to the District in writing. The Contractor shall resume the Work only if it is determined that no Hazardous Material is present or that such Hazardous Material has been rendered harmless. The District shall not require that the Contractor perform any Work relating to Hazardous Material without the Contractor's consent.

Section 5.27 Certification Regarding Asbestos. Prior to commencing the Work, the Contractor shall execute and submit to the District the "Certification Regarding Asbestos" form included in the Required Contract Forms.

Section 5.28 Notice and Certification Regarding Lead-Containing Materials. Pursuant to the Lead-Safe Schools Protection Act (Education Code Section 32240 *et seq.*) and other applicable law, no lead-containing or lead-based paint, plumbing or solders, or other potential sources of lead contamination, shall be used in connection with the construction of the Project, and only trained and

State of California-certified inspectors/assessors, monitors, designers, supervisors, and workers may provide lead-related construction services. Prior to commencing the Work, the Contractor shall execute and submit to the District the "Notice and Certification Regarding Lead-Free Materials" form included in the Required Contract Forms for purposes of acknowledging Contractor's awareness and understanding of these requirements.

Section 5.29 Inspection of Completed Work. In addition to any testing and inspection required by the Contract Documents, the Inspector may require special inspection of any portion of the Work already completed as to which there is a reasonable question as to whether it was completed in accordance with the requirements of the Contract Documents. In such event, the Contractor shall remove or undo all portions of the Work as are necessary to facilitate inspection of the questioned portion of the Work. If the questioned portion of the Work is found not to conform with the Contract Documents, the Contractor shall pay all costs of the re-examination and correction of the Work, including repair or replacement of previously completed Work that was removed or undone to permit the inspection. If the questioned Work is found to conform with the Contract Documents, the District shall pay the cost of the re-examination and any repair or replacement of previously completed Work that was removed or undone to permit the inspection.

Section 5.30 Correction of Work Before Final Payment. The Contractor shall promptly remove from the Project and the Project Site all materials, equipment or other items that, as determined by the Inspector, fail to conform to the requirements of the Contract Documents, regardless of whether such materials have already been incorporated into the Work. The Contractor shall, at its own expense, promptly replace any such materials, equipment, or items with conforming materials, equipment or items, and shall thereafter repair the Work and/or execute the remaining Work in conformance with the Contract Documents. In addition, the Contractor shall bear all costs and expenses of replacing or repairing the work of other contractors or subcontractor(s) that is destroyed or damaged in the course of removing or replacing any non-conforming materials, equipment or other items that were incorporated into the Work. The District shall have no obligation to issue the final payment to the Contractor pursuant to the Contract ("Final Payment") unless and until the Contractor satisfies the requirements of this Section.

Section 5.31 Use of Completed Portions. The District shall have the right at any time to take possession of and use any completed or partially completed portions of the Work, regardless of whether the entire Work is complete. In no event shall such possession and use by the District be construed as, or deemed to be, acceptance by the District of portions of the Work that is not complete or that has not been completed in accordance with the Contract Documents. In the event such possession and use delays or increases the cost to the Contractor of completing the remaining Work, the Contractor may submit a claim to the District Representative for additional compensation and/or extension of time.

Section 5.32 Contractor Warranty.

Subsection 5.32.1 General. In addition to any manufacturer or other warranties and/or guarantees required by the Contract Documents, the Contractor hereby warrants that all Work performed pursuant to the Contract shall be of good quality and conform to all requirements of the Contract Documents, and that the Work shall be free from defective, faulty and/or non-conforming workmanship, materials, equipment, and other items. The Contractor shall repair, replace or correct any and all such defective, faulty, or non-conforming Work as appears or is discovered during the one year period after the date of final acceptance of the Project by the District (or the period of time specified elsewhere in the Contract Documents or in any guarantee or warranty provided by any

manufacturer or supplier of equipment or materials incorporated into the Work, whichever is later). The provisions of this Section shall not be construed to limit the warranty on items for which the Contract Documents specify a longer warranty or on items for which the manufacturer provides a longer warranty period, and the Contractor shall be responsible for any latent defects in the Work for the period applicable to latent acts or omissions specified in Section 7030 of the Business and Professions Code.

Subsection 5.32.2 Performance of Warranty Work. Within seven days after written notice from the District of any such defect, fault and/or non-conformance, the Contractor shall, at its sole cost and expense, commence and perform with due diligence all Work necessary to repair, replace or correct such defect, fault and/or non-conformance so that the requirements of the Contract Documents are met. Notwithstanding the foregoing, the Contractor shall immediately upon notice from the District undertake any necessary repair, replacement or correction in the event of an emergency or a dangerous condition, when necessary to prevent an interruption in the District's operations, or when necessary to prevent injuries to persons and/or damage to property.

Subsection 5.32.3 Collateral Damage. In complying with its warranty obligation, the Contractor shall, at its sole cost and expense, repair, replace or correct any portions of the Project (including work of other contractors and subcontractor(s)) damaged by any defect, fault or non-conformance in the Work, or that become damaged in the course of repair, replacement or correction of defective, faulty, or non-conforming Work.

Subsection 5.32.4 Extension of Warranty Period. With respect to any of the Work that is repaired, replaced or corrected during the applicable term of this warranty, the warranty and the Contractor's obligation hereunder shall be extended for an additional one-year period, commencing with the date of acceptance of the repaired, replaced, or corrected Work.

Subsection 5.32.5 Confirmation of Warranty Work. The Contractor shall, at its sole cost and expense, perform such tests as the District may require to confirm that any repair, replacement or correction pursuant to this Section complies with the requirements of the Contract Documents.

Subsection 5.32.6 Warranties for Benefit of District. Any and all warranties and guarantees of subcontractors, suppliers and manufacturers with respect to any portion of the Work, whether express or implied, are deemed to be obtained by the Contractor for the benefit of the District, regardless of whether or not such warranties and guaranties have been transferred or assigned to the District by separate agreement, and the Contractor agrees to enforce such warranties and guaranties, if necessary, on behalf of the District.

Subsection 5.32.7 Contractor Failure to Perform. In the event the Contractor fails to perform, or fails to timely perform, any necessary repair, replacement or correction to the reasonable satisfaction of the District, the District shall have the right, at the Contractor's sole cost and expense, to repair, replace or correct any defective, faulty or non-conforming Work together with any portion of the Project damaged thereby or by the repair, replacement, or correction thereof. The Contractor or, if applicable, its surety, shall reimburse the District for all costs and expenses that the District incurs in connection with any such repair, replacement or correction by the District, or in connection with enforcing the provisions of this Section.

PART 6. CHANGES IN THE WORK.

Section 6.1 District Instructions. In giving instructions related to performance of the Work, the Contractor shall comply with instructions of the District Representative related to minor changes in the Work not involving extra cost and not inconsistent with the purpose of the Work, and there shall be no additional compensation to the Contractor on account of such minor changes.

Section 6.2 District Authority. For purposes of the Contract, any significant alteration, deviation, or change in the scope, method of performance, nature of materials or price of the Work or the Project, or any other matter materially affecting the performance or nature of the Work or the Project shall be referred to as a "Change in the Work." The District shall have the right to require a Change in the Work, without thereby invalidating the Contract.

Section 6.3 Change Orders. Any and each request or order for a Change in the Work that involves an adjustment to the Contract Amount and/or Contract Time shall be set forth in a written instrument that specifies all relevant information relating to that Change in the Work (each a "Change Order"). Each Party may propose Change Orders for Changes in the Work that Party requests and, upon request of the District, the Contractor, at its cost, shall prepare and propose appropriate Change Orders for Changes in the Work requested by the District. Without limiting the foregoing, any and all adjustments to the Contract Time attributable to a Change in the Work must be set forth in the associated Change Order and not left for later determination. Except as expressly provided in the Contract, no Change Order shall have any force or effect, and the District shall have no liability related thereto for payment or otherwise, unless and until the Change Order has been signed by the Contractor, and approved by the District Board and signed by the District. Except as may be expressly provided in any particular Change Order, all work and services specified in the Change Orders shall be performed in accordance with the terms and conditions of the Contract. Notwithstanding the foregoing, in the event of an emergency endangering life or property, the Contractor may rely on the District's oral requests for additional work and, as applicable, the District will provide for equitable adjustments to the Contract Amount and/or Contract Time. The District will provide oral requests for additional work only to the extent the District Board has expressly delegated such authority.

Section 6.4 Valuation of Change Orders. The Parties shall determine and set forth in an applicable Change Order the fair and reasonable value of each Change in the Work, which will be added to or deducted from the amount of the Contract Amount. The Contractor shall, upon request of the District, provide all information required by the District to substantiate the value of a Change in the Work. No time extension shall be granted in conjunction with any Change Order unless the approved Change Order expressly sets forth such adjustment. The valuation of a Change Order shall be determined in one or more of the following ways: (i) by estimate and agreement on a fixed lump-sum amount; (ii) by unit prices specified in the Contract or as agreed to by the Parties; or (iii) by a percentage of Contractor's cost and a fixed fee, in which case the Contractor shall keep detailed records of the net cost of labor and materials. The valuation of each Change Order may as agreed by the Parties include a reasonable amount for overhead and profit, but in no event shall such overhead and profit exceed an amount equal to ten percent of the total valuation. The District Representative shall certify the amount of each Change Order that does not provide for a fixed lump-sum amount. In the event the Parties are unable to agree on a Change Order valuation method or amount, the Contractor nonetheless shall proceed with any Change in the Work required by the District. In such event, the Contractor shall keep detailed records of the net cost of labor and materials, including, without limitation, any and all vouchers issued in connection with such Change in the Work. Pending final determination of value, payment on account of a Change in the Work shall be made based upon the District Representative's

estimate of the value of the Change in the Work, including, if applicable, a reasonable allowance for overhead and profit due to the Contractor.

Section 6.5 Changes Required by Unilateral Change Order. At any time and from time to time, and without invalidating the Contract, the District may issue a Change Order to require any Change in the Work that is within or consistent with the general scope of the Contract and/or the Project. In order to be binding on the Contractor, each such unilateral Change Order must be signed by the District, the Architect, and the Project Consultant. The Contractor's approval of a unilateral Change Order shall not be required, and the Contractor must implement each change specified in a unilateral Change Order promptly or by such time as specified therein. The District may, but shall not be required to, issue a unilateral Change Order in any case that the District and the Contractor have been unable to agree on the terms of a requested mutual Change Order. A unilateral Change Order may direct that any Work pursuant to the Change Order be performed on a time-and-materials, lump-sum, or unit-price basis. **IF THE CONTRACTOR DISAGREES WITH ANY OF THE TERMS OF A UNILATERAL CHANGE ORDER THAT THE CONTRACTOR DID NOT SIGN TO INDICATE ACCEPTANCE OF SUCH CHANGE ORDER, THE CONTRACTOR MAY PROVIDE NOTICE AS PROVIDED IN SECTION 8.1 OF THESE GENERAL PROVISIONS.**

Section 6.6 Change Orders Specify Full and Final Compensation. Except as expressly set forth in any particular Change Order, each Change Order shall be deemed and construed to include all change(s) required pursuant to the Change Order, including, without limitation, any and all extensions of the Contract Time and any and all overhead, acceleration costs, profit, general conditions costs, expenses, and other direct and indirect costs and expenses of such work and/or changes. In addition, each Change Order shall be deemed and construed to include all necessary adjustments attributable to cumulative impacts of that and any and all preceding Change Orders, whether such impacts relate to scheduling, productivity, or other matters. By signing a Change Order, the Contractor shall be deemed and construed to have waived any and all claims and rights to any adjustments to the Contract Amount and/or Contract Time other than as are set forth in the Change Order, and the Contractor may not thereafter attempt to hold the District responsible for any interference, delay, acceleration, or other effect on the Work and/or additional costs attributable to the change(s) required pursuant to the Change Order. To the extent provided in Section 10.15 of these General Provisions, the Contractor shall defend, indemnify, and hold the District harmless from any and all claims by any subcontractor, vendor, or consultant of the Contractor that are alleged to arise in whole or in part from any Change Order(s), including without limitation, any and all claims for extensions of time and overhead, delays, delay damages, acceleration costs, profit, general conditions costs, expenses, and other direct and indirect costs.

PART 7. UNFORESEEN COST ALLOWANCE

Section 7.1 Authorized Uses of Allowance. The Bid Documents may have required that an allowance for unforeseen costs and conditions be included in the Contract Amount ("Unforeseen Cost Allowance"). In such event, and subject to the other provisions of this Part 7, some or all of the Unforeseen Cost Allowance may be used to pay costs of work not within the then-applicable scope of the Work ("Allowance Work") that is needed as a result of: (i) changes in design of the Project, after commencement of the Work, that are required to satisfy DSA, regulatory, or other applicable requirements, or that are necessary as a result of ambiguities in the approved Plans and Specifications; (ii) physical conditions in, at, or under the Project Site that either were not disclosed to the Contractor or, if applicable, that the Contractor reasonably could not have discovered during its inspection of the Project Site as described in the Contractor's executed Certification Regarding Site Visit; and/or (iii) other Project-related factors as determined by the District in its sole discretion. In any and each case, the

Architect and/or the District shall determine the scope and extent of Allowance Work, and the District shall approve and direct the performance of that Allowance Work.

Section 7.2 District Authority. For avoidance of doubt, and notwithstanding anything else in this Part 7, the use of the Unforeseen Cost Allowance to pay costs for Allowance Work shall be exclusively as determined by the District in its sole and absolute discretion. In addition, because the Unforeseen Cost Allowance is within the approved Contract Amount, it shall not be necessary for the District to obtain District Board approval of any Allowance Work or use of the Unforeseen Cost Allowance as a condition precedent to District authorizing or requiring the performance of Allowance Work or use of the Unforeseen Cost Allowance or, in such event, for such authorization or requirement to be binding on the Contractor. The District may authorize Allowance Work and use of the Unforeseen Cost Allowance by means of Change Order or other appropriate documentation as determined by the District.

Section 7.3 Requests for Use of Allowance. The District may request that the Contractor propose any adjustments to the Contract Amount and/or Contract Time attributable to Allowance Work that the District determines necessary or appropriate, in which event the Contractor, at no additional cost to the District, shall submit to the District a written Change Order in accordance with Part 6 of these General Provisions. If the Contractor desires to propose Allowance Work that the Contractor believes is necessary or appropriate in connection with the Project, then, at no additional cost to the District, the Contractor may submit to the District a written Change Order in accordance with Part 6 of these General Provisions, which Change Order must specify any adjustments to the Contract Amount and/or Contract Time proposed by the Contractor.

Section 7.4 Associated Time Impacts. The District and the Contractor may agree that the performance of Allowance Work will adversely impact the critical path of the Project and, therefore, require an extension of the Contract Time. In such event, the Parties shall attempt to agree on an extension of the Contract Time appropriate to accommodate such Allowance Work; provided that no extension of the Contract Time shall occur in the absence of an adverse impact on the critical path of the Project.

Section 7.5 Determining Allowance Work Costs. Upon receipt of a request from the District as described in Section 7.3, above, or in conjunction with the Contractor submitting a proposed Change Order as described in Section 7.3, above, and without limiting anything else in this Part 7, the Contractor shall provide a reasonably detailed estimate of the costs of the Allowance Work that: (i) specifies the basis for determining the portion of the Unforeseen Cost Allowance to be allocated to the Allowance Work (e.g., lump-sum, time and materials, unit pricing, or other); and (ii) separately details all applicable cost components, including, without limitation, labor costs, materials costs, and equipment costs. However, because the Unforeseen Cost Allowance is already a part of the Contract Amount, in no event shall the estimated or actual costs of Allowance Work include any amounts attributable to the Contractor's "general markup" or "bond markup." If and to the extent a Subcontractor is required to perform a portion of the Allowance Work, the Contractor may include in the estimated or actual costs of Allowance Work such amounts as are attributable to the Subcontractor's general markup (not in excess of ten percent of the total) and/or bond markup (not in excess of one percent of the total), on a pass-through basis only.

Section 7.6 Allowance Directives. If the Parties are unable to agree on whether the critical path of the Project will be adversely impacted by any Allowance Work, or if the Parties are unable to agree on an extension of the Contract Time needed to accommodate Allowance Work that they agree

will adversely impact the critical path of the Project, then: (i) the District, unilaterally and without invalidating the Contract, may require that the Contractor immediately proceed with Allowance Work subject to such terms and conditions as the District unilaterally directs in writing (each an "Allowance Directive"), including, without limitation, associated changes in the Contract Amount and/or Contract Time; (ii) the Contractor's approval of an Allowance Directive shall not be required, but the Contractor may sign and return a copy of the Allowance Directive to indicate acceptance of its terms; and (iii) following receipt of the Allowance Directive, the Contractor shall immediately proceed with the Allowance Work as set forth in that Allowance Directive. **IF THE CONTRACTOR DISAGREES WITH ANY OF THE TERMS OF AN ALLOWANCE DIRECTIVE THAT THE CONTRACTOR DID NOT SIGN TO INDICATE ACCEPTANCE, THE CONTRACTOR MAY PROVIDE NOTICE AS PROVIDED IN SECTION 8.1 OF THESE GENERAL PROVISIONS.**

Section 7.7 Contractor Responsibility for Allowance Work. Any and all Allowance Work authorized or directed in accordance with this Part 7 shall be deemed and construed to be Work within the scope of the Contract, and the Contractor shall be solely responsible for performance of all Allowance Work in strict accordance with requirements of the Contract, to the same extent as other Work within the scope of the Contract.

Section 7.8 Modification of Allowance Work. In the event the Contractor determines that any particular Allowance Work will exceed the authorized scope, costs, or time for performance of the Allowance Work, the Contractor may request a modification to scope, cost, or time for performance of the Allowance Work as provided in Section 7.3 of these General Provisions. In such event, the request for modification shall be subject to processing and approval (or to Allowance Directive) in accordance with this Part 7. Without limiting the foregoing, the Contractor shall submit with its request a detailed breakdown and justification of the reason(s) for the requested modification. The Contractor shall not proceed with the modified Allowance Work unless and until the modification has been approved or directed by the District in accordance with this Part 7.

Section 7.9 Tracking of Allowance Work. In each case that the District authorizes or directs performance of Allowance Work, the Contractor shall specify a separate line-item in the Schedule of Values for the cost of that Allowance Work. The Contractor shall submit, with each Progress Payment Application that includes costs attributable to any Allowance Work, a detailed breakdown of the actual costs of the Allowance Work, which shall be subject to review by the District and must be approved by the District in order for the Progress Payment Application (or, if applicable, application for Final Payment) to be deemed complete pursuant to Part 9 of these General Provisions. In no event shall the amount(s) attributable to Allowance Work specified in any Progress Payment Application exceed the respective amount(s) authorized by the District.

Section 7.10 Deductive Change Order for Unused Allowance. At such time as the District determines that the Contractor has substantially completed all of the Work, if any portion of the Unforeseen Cost Allowance remains unused (and not committed by District authorization or Allowance Directive in accordance with this Part 7), the Contractor, upon request of the District, shall submit to the District a deductive Change Order for the full unused amount of the Unforeseen Cost Allowance. The Contractor shall credit 100 percent of the unused Unforeseen Cost Allowance to the District, without deduction or offset whatsoever, including, without limitation, deductions for overhead, insurance, or bonding costs.

PART 8. REQUIRED NOTICE OF DISAGREEMENT WITH MANDATES

Section 8.1 Notice of Disagreement. The Contractor may provide written notice to the District and, if any, the Architect and the Project Consultant, if the Contractor reasonably believes that the implementation of any bulletin, interpretation, clarification, unilateral Change Order, Allowance Directive, or other unilateral determination issued by or on behalf of the District subsequent to issuance of the Notice to Proceed (each a "Mandate") will require an adjustment to the Contract Amount and/or Contract Time that is not set forth in a corresponding Change Order. Any such notice must set forth in reasonable detail all bases asserted by the Contractor in support of its position that it is entitled to an adjustment of the Contract Amount and/or Contract Time, or that any specified adjustment of the Contract Amount and/or Contract Time is not adequate. **THE CONTRACTOR MUST PROVIDE SUCH NOTICE, IN EACH CASE, PRIOR TO COMMENCING ANY WORK OR OTHERWISE IMPLEMENTING A MANDATE, OR WITHIN THREE DAYS FOLLOWING ISSUANCE OF THE MANDATE, WHICHEVER IS SOONER**.

Section 8.2 Failure To Provide Notice. The purpose of the written notice required pursuant to Section 8.1 of these General Provisions is to permit the District to timely evaluate the Contractor's basis or bases for believing that, in connection with any particular Mandate, the Contractor is entitled to an adjustment, or a further adjustment, to the Contract Amount and/or Contract Time and, as appropriate: (i) order any such adjustment or further adjustment to the Contract Amount and/or Contract Time; (ii) order the Contractor to proceed without any adjustment or further adjustment to the Contract Amount and/or Contract Time; (iii) modify the Work and/or the Project to resolve the matter; or (iv) forego implementation of the Mandate. Therefore, if the Contractor fails to timely provide such notice in accordance with Section 8.1 herein, the Contractor shall be deemed and construed to have waived any and all rights to any adjustment in the Contract Amount and/or Contract Time on account of that Mandate. **WITH RESPECT TO ANY PARTICULAR MANDATE, THE GIVING OF AN APPLICABLE NOTICE PURSUANT TO SECTION 8.1 OF THESE GENERAL PROVISIONS SHALL BE A CONDITION PRECEDENT TO THE CONTRACTOR HAVING ANY RIGHT, WHETHER PURSUANT TO A CLAIM FILED IN ACCORDANCE WITH SECTION 14.2 OF THESE GENERAL PROVISIONS OR OTHERWISE, TO SEEK OR OBTAIN AN ADJUSTMENT OF THE CONTRACT AMOUNT AND/OR CONTRACT TIME.**

PART 9. CONTRACTOR COMPENSATION.

Section 9.1 Application for Payment. The Contractor shall submit to the District Representative, on or before the fifth day of each month, an itemized application for payment for the portion of the Work completed during the prior month ("Progress Payment Application"). The Progress Payment Application shall be in a format approved by the District. The Contractor may call upon the Inspector for assistance in preparing any Progress Payment Application and, prior to submittal to the District Representative, shall permit the Inspector to review the Progress Payment Application. The Contractor shall certify in the Progress Payment Application that the portion of the Work for which payment is requested has been satisfactorily completed and/or that any materials specified in the Progress Payment Application not already incorporated into the Project are stored where indicated. Each Progress Payment Application must identify: (i) the portion and amount of Work completed since the last Progress Payment Application; and (ii) the portion of the requested payment amount attributable to each subcontractor, material supplier, and other entity that is entitled to a portion of the payment amount. Each Progress Payment Application shall be accompanied by an updated construction schedule illustrating the actual Work completed to date in relation to the approved construction schedule. If there is a discrepancy between the actual Work completed and the Work required pursuant to the construction schedule (i.e., the Work is either ahead of schedule or behind schedule), the

Contractor shall include a detailed explanation of such discrepancy with the Progress Payment Application. Payment to the Contractor shall not be deemed to be acceptance, acquiescence, or waiver by the District of any of its rights with respect to any such discrepancy or any deficiency in the Work. The Contractor shall support each Progress Payment Application with such information as reasonably will be necessary for the District Representative to verify the requested payment amount. Payment to the Contractor may be delayed if the Contractor fails to submit complete and accurate information in support of its Progress Payment Applications.

Section 9.2 Verification of Payment Application. The District Representative and/or Architect shall review each Progress Payment Application that satisfies all requirements of Section 9.1 of these General Provisions and, as soon as practicable, but not later than seven days after receipt of the Progress Payment Application, shall: (i) certify that the Progress Payment Application is correct in all aspects and should be paid by the District; (ii) recommend to the District that it reject the Progress Payment Application, stating the reason(s) why rejection is appropriate; or (iii) require that the Contractor provide additional information that the District Representative reasonably determines is necessary to verify any requested payment amount. In the event the District rejects the Progress Payment Application, the Contractor may resubmit the Progress Payment Application with additional or new information establishing why payment should be made despite the reason(s) set forth in the District's initial rejection.

Section 9.3 Progress Payments. The District shall pay the undisputed amount of any Progress Payment Application, less any amounts that may be withheld or retained pursuant to the Contract or law, within thirty days of receipt thereof and in accordance with Public Contract Code Section 20104.50. If the District has requested additional information in support of a Progress Payment Application, the time for payment pursuant to that Progress Payment Application shall be extended by the number of days required for the Contractor to provide the requested information but reduced by the number of days the District exceeds the seven-day return requirement described in Section 9.2 of these General Provisions. The District shall pay interest, at the rate set forth in Code of Civil Procedure Section 685.010(a), on any amount not paid within the time required by Public Contract Code Section 20104.50 and the Contract, provided that such amount is not subject to dispute or a request for additional information.

Section 9.4 Retention. Unless a different percentage is specified in the Special Provisions, the District shall retain five percent of the amount to be paid to the Contractor pursuant to each approved Progress Payment Application ("Retention"), and the total amount of Retention shall not exceed five percent of the Contract Amount. However, if the Special Provisions provide for Retention in excess of five percent, the District shall withhold such greater percentage of each approved Progress Payment as Retention, and, in such event, the total amount of Retention shall not exceed an amount equal to that percentage of the total Contract Amount. The District shall release the Retention to the Contractor with the Final Payment made pursuant to Section 9.9 of these General Provisions. In the event of any dispute between the District and the Contractor, the District, as provided by Public Contract Code Section 7107, may withhold from the Final Payment an amount not exceeding one hundred and fifty percent of the amount in dispute.

Section 9.5 Ownership of Work. As security for partial, progress or other payments, title to the portion of the Work for which such payments are made shall pass to the District at the time of payment. The Contractor shall retain title to all new materials and equipment until incorporated into the Work. However, all Work shall be at the Contractor's risk exclusively until final completion and acceptance of the Project by the District. To the extent that title has not previously been vested in the

District by reason of any such payments, full title shall pass to the District upon delivery of the completed Work as specified in the Contract. Such transferred title shall in each case be good, free and clear from any and all security interests, liens, and other encumbrances. The Contractor promises and agrees that it shall not pledge, hypothecate or otherwise encumber the Work, materials or other items hereby subject to transfer of title in any manner that would result in any lien, security interest, charge, or claim on, against, or with respect to any such items. No such transfer of title shall be deemed or construed to: (i) imply or constitute acceptance by the District of Work that does not strictly conform to the requirements of the Contract; (ii) relieve the Contractor from the responsibility to strictly comply with the Contract; or (iii) relieve the Contractor of responsibility for any loss of or damage to the Work, materials, or other items on the Project.

Section 9.6 Securities In Lieu of Retention. Upon request to the District, the Contractor shall be permitted, in accordance with Public Contract Code Section 22300, to substitute securities in lieu of the Retention withheld by the District in order to ensure Contractor's performance under the Contract. Alternatively, the Contractor may request that the District pay any Retention earned by Contractor directly to an escrow agent who shall, as directed by the Contractor, invest the Retention in securities. Any escrow agreement shall be substantially in the form set forth in, and any securities invested or substituted in lieu of Retention shall be of the type permitted pursuant to, Public Contract Code Section 22300. The Contractor shall be responsible for all costs (including, without limitation, the District's costs) attributable to any investment or substitution of securities in lieu of Retention and/or any costs incurred in connection with establishing and maintaining an escrow account.

Section 9.7 Deductions for Uncorrected Work. The District may determine, in its sole discretion, not to correct all or any portion of the Work or Project that is damaged or that was not completed in accordance with the Contract and, in such event, if applicable, an equitable deduction from the Contract Amount shall be made on account of such damaged or incomplete work.

Section 9.8 Other Withholdings. In addition to the Retention, the District may withhold from the Final Payment or from amounts payable pursuant to any approved Progress Payment Application all amounts necessary to protect District from any loss or liability that has or might result from: (i) Liquidated Damages; (ii) the costs to the District of performing any obligation of the Contractor related to the Work that the Contractor has failed to timely perform or has performed inadequately; (iii) failure of the Contractor to timely correct defective Work; (iv) any stop payment notice(s) related to the Work; (v) reasonable doubt that the Work can be completed for the unpaid balance of the Contract Amount or prior to any scheduled completion date; (vi) unsatisfactory progress, execution or performance of the Work; (vii) unauthorized deviations from the Contract; (viii) failure of the Contractor to maintain or timely submit proper and sufficient documentation as required by the Contract or by the District during performance of the Work; (ix) erroneous or false estimates by the Contractor of the value of the Work performed; (x) expenses, losses, or damages incurred by the District for which Contractor is liable pursuant to the Contract; (xi) damage caused by the Contractor or its Work to the Project or to the work of any other prime contractor or subcontractor performing work on the Project; and (xii) any other sums that the District is entitled to withhold or recover from the Contractor pursuant to law or the Contract. The failure by the District to withhold any such amount from any payment, or from a particular payment, to the Contractor shall not constitute a waiver of the District's right to such amount.

Section 9.9 Final Payment. The Inspector shall provide written certification to the District when, as determined by the Inspector, the Contractor has satisfactorily completed the Work and all other obligations pursuant to the Contract Documents. The Inspector shall indicate in the certificate, based on actual measurements, the whole amount and value of the Work accomplished by the

Contractor and that all "punch list" items have been satisfactorily completed. The District shall thereafter inspect the Work and determine whether all of the Work has been completed in accordance with the terms of the Contract Documents and should be accepted by the District Board. Not sooner than thirty-five days, and not later than sixty days, after acceptance of the Work by the District Board, the District shall issue the Final Payment and accumulated Retention to the Contractor, subject to withholding of disputed or other amounts as permitted or required by applicable law and/or the Contract Documents. The District, within fifteen days after acceptance of the Work by the District Board, may cause a Notice of Completion for the Work to be filed in the office of the Clerk-Recorder for the County of Orange ("County Recorder").

Section 9.10 Waiver and Release. Notwithstanding any other provision of the Contract, as a condition precedent for each payment to the Contractor hereunder: (i) the Contractor must complete, sign and submit to the District a conditional waiver and release in accordance with, and in substantially the form set forth in, Civil Code Section 8132, for the full amount of the payment; (ii) the Contractor must complete, sign and submit to the District an unconditional waiver and release, in substantially the form set forth in Civil Code Section 8134, for all amounts previously paid to the Contractor and for which the Contractor has not already submitted an unconditional waiver; and (iii) a completed and signed unconditional waiver and release, in substantially the form set forth in Civil Code Section 8134, for each subcontractor, materials supplier and other entity that has been paid by the Contractor, but that has not already submitted an unconditional waiver and release for all such payment amounts. Upon completion of all of the Work, and issuance of Final Payment and Retention to Contractor in connection with the Project, the District may require that Contractor complete, sign and submit to the District an unconditional waiver and release upon Final Payment in accordance with, and in substantially the form set forth in, Civil Code Section 8138. In addition, the District may require that the Contractor submit to the District an affidavit to the effect that such releases account for all the labor and material used in connection with the Work for which a stop payment notice could be filed. In the event any subcontractor, materials supplier, or other entity or person refuses to provide a release in full, the Contractor may provide the District with a bond satisfactory to the District to indemnify the District against any stop payment notice that may be filed by such entity or person. If any stop payment notice remains unsatisfied after the District has made the Final Payment to the Contractor, the Contractor shall pay to the District all amounts, if any, that the District may be compelled to pay in discharging such stop payment notice, together with the District's costs and expenses related thereto, including attorneys' fees and costs.

Section 9.11 Claims for Extra Cost. **IF THE CONTRACTOR CLAIMS THAT INSTRUCTIONS RELATED TO THE WORK RESULTED IN COSTS TO THE CONTRACTOR THAT WERE NOT CONTEMPLATED AND ARE NOT INCLUDED WITHIN THE CONTRACT AMOUNT, THE CONTRACTOR SHALL GIVE WRITTEN NOTICE THEREOF TO THE DISTRICT REPRESENTATIVE WITHIN A REASONABLE TIME, BUT NOT IN EXCESS OF FIVE DAYS AFTER THE RECEIPT OF SUCH INSTRUCTIONS.** In the event of any such claim, except in an emergency in which life or property is endangered, the Contractor shall not commence execution of the portion of the Work that is affected by such claim unless and until directed to do so by the District. In the event the District Representative determines that any such claim is valid, the Contract Amount shall be adjusted as provided for a Change in the Work. The Contractor shall bear the risk, cost, and expense of any Change in the Work undertaken without prior approval of the District.

Section 9.12 Delay Damages. The Contractor shall not claim or be entitled to receive any compensation or damages because any portion of the Project at any time has not progressed or is not sufficiently complete for Contractor to timely proceed or continue with any portion of the Work, except if and to the extent such delay is the result of an unreasonable act of the District not within the

contemplation of the Parties. Notwithstanding the foregoing, the Contractor shall not claim or be entitled to compensation for any such otherwise compensable delay in the event of a concurrent delay resulting from acts or omissions of the Contractor or its subcontractors or suppliers. **IN THE EVENT OF A PERCEIVED DELAY, COMPLIANCE WITH THE NOTICE REQUIREMENTS SET FORTH IN SECTION 5.6 OF THESE GENERAL PROVISIONS SHALL BE A CONDITION PRECEDENT FOR ANY RELATED CLAIM BY THE CONTRACTOR.** If the Contractor fails to give timely notice of a delay in accordance with Section 5.6 of these General Provisions, the Contractor shall have no right or entitlement to any compensation or extension of time in connection with such delay.

PART 10. INSURANCE AND INDEMNIFICATION.

Section 10.1 General Liability Insurance. Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times as required by this Section, a policy of commercial general liability insurance ("General Liability Policy"), written on an "occurrence" basis, covering claims for bodily injury, including death, property damage, and consequential damages that may arise out of or result from the Contractor's performance of the Contract or from actions taken in connection with the Work, whether such actions are taken by the Contractor, by any subcontractor of the Contractor, or any person directly or indirectly employed by any of them. Except as expressly agreed by the District in writing, the General Liability Policy must at a minimum include or be endorsed to include coverage for: (i) bodily injury, disease, sickness and death; (ii) property damage; (iii) premises-operations liability; (iv) products-completed operations liability; (v) explosion, collapse and underground (XCU); (vi) personal and advertising injury; (vii) sudden or accidental discharge of contaminants or pollutants; (viii) contractual liability assumed by the Contractor pursuant to the Contract Documents; and (ix) independent contractor's liability. The General Liability Policy must provide coverage with minimum coverage limits as are specified in the Special Provisions. If an aggregate limit applies to the General Liability Policy, not less than the minimum aggregate coverage limit specified in the Special Provisions must apply specifically to the Project and the Contract, by means of either an endorsement or a separate "following form" excess policy. The Contractor must keep the General Liability Policy in full force and effect for at least one year after the date of Final Payment to the Contractor to ensure that coverage for products-completed operations remains in effect at least for such one-year period.

Section 10.2 Vehicle Liability Insurance. Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times prior to final completion and acceptance of the Work, a policy of vehicle liability insurance, written on an occurrence basis, providing coverage for all motor vehicles (whether owned, leased, rented, or borrowed) that are driven or used in connection with the Work ("Vehicle Liability Policy"). The Vehicle Liability Policy must, by separate endorsement, name the District as an additional insured and must include a standard waiver of the insurer's rights of subrogation against the District. The Vehicle Liability Policy must provide coverage with minimum coverage limits as specified in the Special Provisions. If an aggregate limit applies, not less than the minimum aggregate coverage limit specified in the Special Provisions must apply specifically to the Project and the Contract, by means of endorsement or separate "following form" excess policy.

Section 10.3 Excess/Umbrella Coverage. The Contractor may satisfy portions of the coverage limits for the General Liability Policy and/or the Vehicle Liability Policy (in either case, an "Underlying Policy") through a policy of excess or umbrella liability insurance ("Excess Liability Policy"); provided that, in each case, the Excess Liability Policy must, without exception: (i) follow the form of the Underlying Policy; (ii) provide coverage at least as broad as the Underlying Policy; and (iii) provide

coverage in excess of the coverage of the Underlying Policy, without any gap(s) in coverage (limits or otherwise).

Section 10.4 Workers Compensation Insurance. In accordance with Labor Code Sections 1860 and 1861, and concurrently with execution and delivery of the Contract, the Contractor shall execute and deliver to the District the "Certification Regarding Workers Compensation" form included in the Required Contract Forms to thereby acknowledge its responsibility to secure workers' compensation insurance in compliance with Labor Code Section 3700 *et seq*. Prior to commencing the Work, the Contractor must have in effect, and the Contractor must maintain in effect at all times prior to full and final completion of the Work, a policy of workers' compensation insurance in compliance with Section 3700 of the Labor Code and other applicable provisions of law ("Workers Compensation Policy"). Prior to expiration of the Contract Return Period, the Contractor must provide to the District such Certificates of Insurance as evidence that the Contractor has such insurance coverage in effect.

Section 10.5 Builder All-Risk Insurance.

Subsection 10.5.1 General Requirement. If so specified in the Special Provisions, the Contractor must procure a policy of builder's all-risk insurance, written on a non-reporting, completed value basis, providing coverage in an amount not less than the greater of: (i) the full estimated replacement cost of the Project assuming the Work has been completed; or (ii) the Contract Amount ("Builder All-Risk Policy"). The Builder All-Risk Policy must apply, at a minimum, to: (i) completed Work and the Project as improved by the Work; (ii) Work in progress; (iii) temporary structures and improvements; (iv) materials, supplies, and equipment stored on the Project Site; (v) materials, supplies, and equipment stored at off-site locations or in transit; and (vi) operational and performance testing, commissioning, and start-up.

Subsection 10.5.2 Required Coverage. The Builder All-Risk Policy must cover: (i) losses arising from causes that include, without limitation, fires, windstorms, lightning, explosions, theft, earth movement, collapse, and water damage; (ii) costs associated with clean-up, demolition, repair or other correction of covered losses, including, without limitation, fees for necessary architectural, engineering, and other professional services; and (iii) all ensuing or consequential losses attributable to causes of loss excluded under the Builder All-Risk Policy, including, without limitation, faulty design or workmanship. The Builder All-Risk Policy must be endorsed for extended coverage, vandalism, malicious mischief, and theft, including theft of materials not then incorporated into the Work. Any exclusion of losses attributable to faulty design or workmanship shall not exceed the total costs the District would have incurred to repair or otherwise correct the fault if it had been discovered prior to the loss having occurred.

Subsection 10.5.3 Earthquake and Flood Coverage. The foregoing provisions of this Section 10.5 shall not be deemed or construed to require that the Builder All-Risk Policy include coverage for earthquakes and/or flooding attributable to natural causes. However, the District may require that the Contractor obtain an endorsement to the Builder All-Risk Policy to provide earthquake and/or flood insurance for the Project, in which event the District shall be responsible for the cost of the endorsement.

Subsection 10.5.4 Loss Payees and Additional Insureds. The Builder All-Risk Policy must name or be endorsed to name the District and the Contractor as loss payees (or, if applicable, additional insureds), including, without limitation, for the purposes of any tax-exempt bond proceeds used to fund the Project, and the District shall for such purposes be deemed the owner of all work and

materials on the Project Site or stored for use on the Project Site. The payment by the District of any Progress Payment, in and of itself, shall not be deemed or construed to: (i) create an insurable interest for the District; or (ii) relieve the Contractor of responsibility it otherwise may have for losses arising from any direct physical loss, damage, or destruction incurred prior to final completion and acceptance of the Work.

Section 10.6 Contractor Insurance is Primary. The coverages provided by each of the General Liability Policy, the Vehicle Liability Policy, and, if applicable, the Builder All-Risk Policy shall be primary and not contributing with respect to any insurance or self-insurance programs covering the District and/or any of the District Agents (defined in Section 10.16 of these General Provisions).

Section 10.7 Insurer Standards. Each of the General Liability Policy, the Vehicle Liability Policy and, if applicable, the Builder All-Risk Policy must be issued by an insurer that is licensed to do business in the State of California and that has, as determined by the A.M. Best Company, a "Financial Strength Rating" of not less than "B+" (B plus), a "Ratings Outlook," if assigned, of either stable or positive, and a "Financial Size Category" of not less than "VIII." If a "Ratings Outlook" has been assigned to any such insurer that is not either stable or positive, the District may consider the insurer's Rating's Outlook and all other relevant factors in determining whether the insurer is satisfactory, and, if the District reasonably determines that there may be a significant risk in accepting any insurance policy issued or to be issued by such insurer, then, upon request of the District, the Contractor must obtain such insurance policy through another insurer that satisfies the standards set forth in this Section.

Section 10.8 Additional Insureds. The General Liability Policy and the Vehicle Liability Policy each must name or be endorsed to name the District as an additional insured. Each endorsement specifying any additional insured must be ISO Form CG 20 10 11 85 or an alternative endorsement reasonably acceptable to the District. Each additional insured endorsement shall include a "primary insurance clause" stating to the effect that: "The insurance afforded by this policy for the benefit of the additional insureds shall be primary insurance, and any insurance maintained by the additional insureds shall be excess and non-contributory with the insurance provided hereunder." The coverage provided to the additional insureds must be at least as broad as the coverage provided to the Contractor and may not contain any additional exclusionary language or limitations applicable only to the additional insureds.

Section 10.9 Cross-Liability and Waivers of Subrogation. Each of the General Liability Policy, the Vehicle Liability Policy, and, if applicable, the Builder All-Risk Policy must be endorsed with a cross-liability endorsement (separation of insureds) and include a waiver of the insurer's rights of subrogation against each person or entity that is an additional insured or loss payee. The Workers Compensation Policy must be endorsed to include a waiver of the insurer's rights of subrogation against the District. A waiver of subrogation shall be effective with respect to each applicable person or entity regardless of whether the person or entity: (i) has a right to indemnification; (ii) has an obligation to indemnify any other person or entity; (iii) paid any premium for the applicable insurance; or (iv) has an insurable interest in any property. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 10.16 of these General Provisions, with respect to any and all subrogation claims arising from any of the General Liability Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable), or the Workers Compensation Policy.

Section 10.10 Premiums, Deductibles and Self-Insured Retentions. Except as provided in Subsection 10.5.3 of these General Provisions, the Contractor shall be solely responsible and liable for paying any and all premiums and other costs incurred in obtaining and maintaining the General Liability

Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable), and the Workers Compensation Policy, including, without limitation, any and all renewal premiums. Subject to written approval by the District, which the District may grant or withhold in its reasonable discretion, one or more of such insurance policies may be subject to a deductible or self-insured retention. Upon reasonable request of the District, the Contractor shall either: (i) cause any such deductible or self-insured retention to be reduced or eliminated; or (ii) obtain and provide to the District a bond or bonds guaranteeing payment of the deductible or self-insured retention, together with any losses and related investigations, claims, administrative and legal costs and expenses. Each Certificate of Insurance (defined in Section 10.11 of these General Provisions) that evidences any such insurance policy must specify any and all deductibles applicable to the policy. The Contractor shall be solely responsible and liable for any and all such deductibles and self-insured retentions. However, each insurance policy subject to any deductible or self-insured retention shall provide, or be endorsed to provide, for payment or satisfaction of the deductible or self-insured retention by the District in the event of Contractor's insolvency or inability to otherwise pay or satisfy the deductible or self-insured retention. Contractor's indemnification and other obligations pursuant to Section 10.16 of these General Provisions shall apply to any and all claims arising from such premiums, deductibles, and/or self-insured retentions.

Section 10.11 Evidence of Coverage. Prior to expiration of the Contract Return Period, the Contractor must provide to the District, for each of the General Liability Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable), and the Workers Compensation Policy, a certificate of insurance evidencing that such insurance is in effect (each a "Certificate of Insurance"), together with any and all endorsements to such policies required pursuant to this Part 10 of these General Provisions. Each Certificate of Insurance must: (i) be executed by a duly authorized officer, agent, or other representative of the insurer; (ii) include an original handwritten signature of the insurer's representative, not a stamped or printed signature; and (iii) must certify the names of the insured, any additional insureds, the type and amount of the insurance, the location and operations to which the insurance applies, and the expiration date of such insurance. The Contractor must provide to the District an updated Certificate of Insurance for each renewal of any such insurance policy not less than thirty days prior to any expiration of the policy. Each renewal and replacement of any such policy that, as permitted by this Part 10 of these General Provisions, is written on a "claims made" basis must have a retroactive date that is prior to the date the Contractor was initially required to have such insurance policy in effect pursuant to this Part 10. If any Certificate of Insurance associated with any of the General Liability Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable), or the Workers Compensation Policy sets forth language to the effect that it "does not amend, extend or alter the coverage" of the insurance policy, or that the coverage available pursuant to the policy "is subject to all of the terms, exclusions, and conditions of the policy," then, notwithstanding Section 10.13 of these General Provisions, the Contractor, prior to commencing the Work, must provide to the District a certified copy of such insurance policy and all associated endorsements, riders, *et cetera*.

Section 10.12 Mandatory Notice from Insurer of Change in Coverage. Each of the General Liability Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable), and Workers Compensation Policy, and each associated Certificate of Insurance, must require or be endorsed to require that the insurer notify the District not less than thirty days prior to any cancellation, termination, reduction in coverage, or expiration without renewal of such policy, or, in the case of any cancellation for non-payment of premium, not less than ten days prior to cancellation. Language in any such insurance policy or Certificate of Insurance to the effect that the insurer shall "endeavor" to provide such notice, or to the effect "that failure to mail such notice shall impose no obligation and liability upon the company, its agents or representatives," shall not be acceptable.

Section 10.13 District Review and Approval of Insurance Policies. Within ten days of a request from the District, the Contractor must provide to the District a certified copy of any of the General Liability Policy, the Vehicle Liability Policy, the Builder All-Risk Policy (if applicable) and/or the Workers Compensation Policy as requested by the District, together with any and all associated Certificates of Insurance, endorsements, riders, *et cetera*. Each of such insurance policies and associated other documents shall be subject to review and approval by the District in regard to compliance with the requirements of this Part 10 of these General Provisions. No such review by the District, and no failure by the District to undertake any such review, shall be deemed or construed to be an assumption of liability by the District or to constitute a waiver of any non-compliance by the Contractor with the requirements of this Part 10 of these General Provisions.

Section 10.14 Subcontractor Insurance. The Contractor must require in its subcontracts applicable to the Work that each subcontractor obtain and maintain insurance coverage in compliance with all of the preceding requirements of this Part 10 of these General Provisions, except that: (i) no subcontractor need carry a Builder All-Risk Policy; and (ii) coverage limits for subcontractor General Liability Policy and Vehicle Liability Policy shall be as specified in the Special Provisions. The Contractor shall be responsible for ensuring that any and all subcontractors have such insurance in effect and for providing all documentation of the subcontractors' insurance coverage (i.e., copies of insurance policies and Certificates of Insurance) to the District within the time(s) required by this Part 10 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 10.16 of these General Provisions, with respect to any and all claims, demands, actions, costs, expenses, and other liabilities arising from the failure of any subcontractor to have in effect the insurance required pursuant to this Part 10 of these General Provisions.

Section 10.15 Waiver of Claims. Each of the District and the Contractor hereby waives any and all rights it may have against the other pursuant to the Contract to the extent the waiving Party is compensated for claims, damages, or other liabilities by any of the insurance required pursuant to this Part 10 of these General Provisions. The Contractor shall require that in its subcontracts applicable to the Work that each subcontractor waive any and all rights it may have against the District in connection with the Work to the extent the subcontractor is compensated for claims, damages, or other liabilities by any of the insurance required pursuant to this Part 10 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 10.16 of these General Provisions, with respect to any and all claims, demands, actions, costs, expenses, and other liabilities arising from the failure of any subcontractor to provide the waiver as required pursuant to this Section.

Section 10.16 Indemnification. The Contractor shall indemnify, defend and hold-harmless the District, the District Board and each individual member thereof, and the District's other officers, employees and agents (collectively, not including the District, the "District Agents"), and each of them, against and from any and all claims, demands, actions, damages, losses, costs, expenses (including, without limitation, reasonable attorneys' fees and expenses), and other liabilities of whatever nature that arise from or in connection with the performance of the Contract or of the Work by Contractor or its officers, agents, employees, or subcontractors. The Contractor shall reimburse the District for all damages, expenses and losses incurred by the District as a consequence of any claim, demand, action or other proceeding that is within the scope of the foregoing provision of this Section, including, without limitation, any and all disputes between the Contractor and any of its subcontractors. However, the Contractor shall not be liable or responsible pursuant to this Section to the extent any claim, demand, action, damage, loss, cost, expense or other liability is attributable to the active negligence, sole negligence or willful misconduct of the District or any of the District Agents, in which event the District

and the Contractor shall be liable on a comparative basis. The requirements of this Section shall be in addition to any other indemnification provisions contained in the Contract Documents and shall survive termination of the Contract. Any and all obligations set forth in the Contract Documents requiring that the Contractor indemnify, defend and hold-harmless the District (including, without limitation, this Section) shall be deemed and construed as an obligation to indemnify, defend and hold-harmless the District, the District Agents, and each of them.

Section 10.17 Subcontractor Indemnification. The Contractor shall require that in its subcontracts applicable to the Work that each subcontractor indemnify, defend and hold-harmless the District in connection with the Work to the extent provided in Section 10.16 of these General Provisions. The Contractor shall indemnify, defend and hold-harmless the District, in accordance with Section 10.16 of these General Provisions, with respect to any failure of any subcontractor to indemnify, defend, and hold-harmless the District as required pursuant to this Section.

PART 11. BOND REQUIREMENTS.

Section 11.1 Payment Bond. Concurrent with execution and delivery of the Contract, the Contractor must deliver to the District a "Payment Bond" in the form included in the Required Contract Forms, which shall have been duly executed by the Contractor and a Qualified Surety (defined in Section 11.3 of these General Provisions). The payment bond must have a penal sum equal to one hundred percent of the Contract Amount, and shall be exclusive of any obligation under the performance bond required pursuant to Section 11.2 of these General Provisions. The District shall not be required to issue any payment whatsoever to the Contractor pursuant to the Contract unless and until the District has received and approved such payment bond.

Section 11.2 Performance Bond. Concurrent with execution and delivery of the Contract, the Contractor shall deliver to the District a "Performance Bond" in the form included in the Required Contract Forms, which shall have been duly executed by the Contractor and a Qualified Surety. The performance bond must have a penal sum equal to one hundred percent of the Contract Amount, and shall be exclusive of any obligation under the payment bond required pursuant to Section 11.1 of these General Provisions. The District shall not be required to issue any payment whatsoever to the Contractor pursuant to the Contract unless and until the District has received and approved such performance bond.

Section 11.3 Surety Qualifications. The payment and performance bonds required pursuant to Sections 11.1 and 11.2, respectively, of these General Provisions each must have been executed and issued by a surety that satisfies the requirements of this Section. The surety must be an "admitted surety insurer" as defined in California Code of Civil Procedure Section 995.120. In order to ensure that the surety is an "admitted surety insurer," the Contractor must attach to such bonds either of the following documents as required by California Code of Civil Procedure Section 995.311: (i) a copy of information printed from the website of the California Department of Insurance confirming that the surety is an admitted surety insurer; or (ii) a certificate from the County Recorder confirming that the surety is an admitted surety insurer. The surety that issues the performance bond must have a current A.M. Best Company "financial strength rating" of not less than "A-" (A minus) and a "financial size category" of not less than "VIII." A surety that meets the requirements of this Section shall be deemed to be a "Qualified Surety" for purposes of the Contract. If either or both of the payment bond or performance bond submitted by the Contractor was not executed and issued by a Qualified Surety, the Contractor, within forty-eight hours of notice from the District Representative and prior to commencing the Work, must submit a replacement bond or bonds that satisfy the requirements of this Section, and if

the Contractor fails to submit such replacement bond(s), the Contractor shall be deemed in material breach of the Contract. The foregoing requirement to provide a replacement payment or performance bond shall also be applicable in the event the surety, during the course of construction of the Project, loses its status as an "admitted surety insurer" as defined in Code of Civil Procedure Section 995.120.

Section 11.4 Increase in Bond Penal Sum. In the event the Contract Amount is increased in accordance with the Contract, the Contractor, upon request of the District, shall promptly cause the amount of the payment and performance bonds to be correspondingly increased and shall promptly deliver satisfactory evidence thereof to the District. If the Contractor fails to provide to the District any bond required pursuant to the Contract, the District, in its sole discretion, may terminate the Contract for cause.

Section 11.5 Sufficiency of Bonds. If, in the reasonable opinion of the District, either or both of the payment bond or performance bond required pursuant to this Part 11 of these General Provisions, or the surety issuing either or both of such bonds, is or becomes insufficient or unsatisfactory, the Contractor shall renew or replace such bond within forty-eight hours of notice from the District Representative, and any failure by the Contractor to do so shall be deemed a material breach of the Contract.

PART 12. SUSPENSION OR TERMINATION.

Section 12.1 Suspension of Work by District. The District, in its sole discretion, may at any time suspend performance of the Work and/or the Project by giving written notice to Contractor, and the suspension shall be effective upon receipt of such notice by the Contractor. Upon receipt of such notice, the Contractor shall immediately commence the process of suspending the Work, making safe any work in progress but otherwise taking steps to cease further progress on the Project. The District, consistent with the provisions of the Contract, shall pay the Contractor for all Work adequately performed up to the effective date of such suspension and for work reasonably required to eliminate safety hazards. Contractor shall resume its Work on the Project within twenty calendar days following written notice from the District to further proceed with Work on the Project.

Section 12.2 Termination for Convenience. The District, in its sole discretion, and without need for cause, may at any time terminate the Contract, or any portion thereof, by giving written notice to the Contractor, and such termination shall be effective upon receipt of such notice by the Contractor. Upon receipt of such notice, the Contractor shall immediately commence the process of terminating the Work, making safe any work in progress but otherwise taking reasonable steps to cease further progress on the Project. The District, consistent with the provisions of the Contract, shall pay Contractor for all Work adequately performed up to the effective date of the termination for convenience as for work reasonably required to eliminate safety hazards. In the event of a termination for convenience, the Contractor shall not be entitled to any profits, overhead or general conditions costs for any portion of the Work that was not performed prior to termination or to compensation for costs related to discontinuing the Work. Notwithstanding a termination pursuant to this Section, the Contractor and its surety shall continue to be responsible and liable in accordance with the Contract Documents and applicable law for any and all defects in quality, damage to property, injury to any person, and other matters arising from the Work performed prior to the termination.

Section 12.3 Termination for Cause.

Subsection 12.3.1 Breach Events. Each of the following events shall be deemed a breach by the Contractor of its obligations pursuant to the Contract (each a "Breach Event"):

(i) Contractor is adjudged bankrupt, makes a general assignment for the benefit of creditors, or a receiver is appointed on account of Contractor's insolvency;

(ii) As reasonably determined by the District, the Contractor refuses or fails to provide a sufficient number of properly skilled workmen or the proper equipment, materials, supplies, and/or other things as are necessary for timely and/or proper completion of the Work;

(iii) Contractor fails to promptly pay subcontractors, suppliers, or others for labor, materials, services, or other things provided in connection with the Work;

(iv) Contractor or any of its subcontractors fail to comply with any laws, ordinances, or reasonable instructions of the District;

(v) Contractor or any of its subcontractors fail to construct any portion of the Project in accordance with requirements and standards applicable to the Work, including, without limitation, applicable standards of quality and/or precision; and

(v) Contractor or any of its subcontractors otherwise fail to comply with any material provision of the Contract.

Subsection 12.3.2 Opportunity to Cure. If a Breach Event occurs, the District may serve notice on the Contractor and its surety(ies) that describes in reasonable detail the breach by the Contractor ("Notice of Breach"). The Contractor shall have forty-eight hours after service of any such Notice of Breach to cure the Breach Event specified in the Notice of Breach or to make arrangements satisfactory to the District for cure of the Breach Event. Notwithstanding the foregoing, in the case of a Breach Event pursuant to clause (i) of Subsection 12.3.1 of these General Provisions, the Contractor shall have thirty days to cure or make arrangements satisfactory to the District for cure of the Breach Event.

Subsection 12.3.3 District Remedies for Failure to Cure. Upon failure of the Contractor to cure or make satisfactory arrangements for cure of a Breach Event in accordance with Subsection 12.3.2 of these General Provisions, the District may, at its option: (i) take such actions as, in the District's opinion, are necessary to correct, cure, or otherwise address the Breach Event -- including, without limitation, supplementing the Contractor's workforces and/or contracting for any (or any additional) inspection, quality control, or other personnel -- and deduct the cost of such actions from any amounts due or to become due to Contractor pursuant to the Contract; (ii) terminate the Contractor's right to perform the Work by giving written notice of termination to the Contractor and the surety that issued the Contractor's Performance Bond; and/or (iii) take one or more other actions as permitted by the Contract or applicable law. In the event the District terminates the Contractor's right to perform the Work, the surety shall have the right to take over and perform the Contract.

IF THE SURETY DOES NOT (i) GIVE THE DISTRICT WRITTEN NOTICE OF SURETY'S INTENTION TO TAKE OVER AND COMMENCE PERFORMANCE OF THE CONTRACT WITHIN TEN DAYS OF RECEIPT OF THE NOTICE OF TERMINATION AND/OR (ii) COMMENCE PERFORMANCE OF THE CONTRACT WITHIN TWENTY DAYS AFTER RECEIPT OF THE NOTICE OF TERMINATION, THEN THE DISTRICT MAY ELECT TO TAKE OVER AND PROCEED TO COMPLETE THE WORK, BY SEPARATE CONTRACT OR BY ANY OTHER MEANS OR METHOD THE DISTRICT DEEMS ADVISABLE.

Notwithstanding a termination pursuant to this Section, the Contractor and its surety shall continue to be responsible and liable, in accordance with the Contract Documents and applicable law, for: (i) any

and all defects in quality, damage to property, injury to any person, and other matters arising from the Work performed prior to the termination; and (ii) costs of completing the Work in excess of the Contract Amount, as provided in Subsection 12.3.4.

Subsection 12.3.4 Effect of Termination for Cause. In connection with a termination for cause pursuant to this Section 12.3, the District shall be entitled to withhold and retain from any payment due to the Contractor all amounts necessary to offset any costs, expenses (including, but not limited to, attorneys' fees), losses and/or damages incurred by the District as a result of the termination for cause. If the remaining amounts potentially payable to the Contractor pursuant to the Contract are insufficient to offset such costs, expenses, losses and/or damages, the Contractor and/or its performance bond surety shall reimburse the District for the uncompensated balance of such costs, expenses, losses and/or damages, including, without limitation, any uncompensated costs to complete the Work. The District's rights pursuant to the Contract are in addition to, and not in lieu of, any other rights or remedies available to the District in the event of a termination for cause. In addition, the following provisions shall also apply in the event of a termination for cause pursuant to this Section 12.3:

(i) The Contractor shall not be entitled to further compensation until satisfactory completion and acceptance by the District of all of the Work.

(ii) The District shall give written notice of a termination pursuant to this Section 12.3 to both the Contractor and the Contractor's performance-bond surety. The surety shall thereafter have the right to take over and perform the Contract, provided, however, that, if the surety does not, within seven calendar days after service of the notice of termination, notify the District that the surety intends to take over and perform the Contract, or if the surety does not commence performance of the Contract within twenty days after providing such notice to the District, the District may take over and complete the Work by any means the District may deem appropriate, for the account of and at the expense of the Contractor, and the Contractor and its surety shall be liable to the District for costs thereby incurred by the District in excess of any remaining portion of the Contract Amount that otherwise would be payable to the Contractor.

(iii) In the event the District takes over the Work, the District may, without liability for doing so: (1) take possession of the Work and the Project Site; (2) take possession of all materials, tools, equipment and appliances located at the Project Site and use them in connection with completion of the Project; (3) procure, upon such terms and in such manner as it may determine appropriate, services required to complete the Work; (4) require that the Contractor provide to the District any and all finished or unfinished documents, data, diagrams, drawings, materials or other matter prepared or built by Contractor in connection with its performance of the Contract; and (5) complete the affected portion(s) of the Project by whatever means and methods the District may deem to be in its best interests, including, but not limited to, calling upon Contractor's surety to complete the Work or to issue payment(s) to the District and/or its contractor(s).

(iv) In the event the District takes over and satisfactorily completes the Work, if the unpaid balance of the Contract Amount exceeds the cost to the District of satisfactorily completing the Work, including, without limitation, compensation for any additional architectural, managerial or administrative services needed as a result of the Contractor's breach, such excess shall be paid to the Contractor after satisfactory completion and acceptance of the Work by the District less any amounts attributable to any stop payment notices and amounts withheld by the District in accordance with applicable law or the Contract. If the cost to the District of satisfactorily

completing the Work is greater than the unpaid balance of the Contract Amount, the Contractor, or its surety, shall pay the difference to the District within thirty days of notice from the District. In addition, the District may pursue any other recourse or remedies against the Contractor and/or its surety as may be available pursuant to law or the Contract.

Section 12.4 Termination By Contractor. Subject to the other provisions of this Section, the Contractor may stop the Work or initiate termination of the Contract by giving written notice to the District Representative if, through no fault of the Contractor or its employees, subcontractors or suppliers: (i) all work on the Project ceases for a period exceeding sixty days pursuant to an order or direction of any court or government entity, other than the District, with jurisdiction over any portion of the Project; (ii) the District Representative arbitrarily fails, within thirty days of receipt from Contractor of an applicable Progress Payment Application, to issue a certificate for payment for any undisputed amount(s) due to Contractor; or (iii) the District fails, within sixty days of receipt from the District Representative of a certificate of payment therefor, to pay to the Contractor any undisputed amount specified in such certificate of payment. Upon receipt of any such notice from the Contractor, the District shall have fifteen days to cure or make other arrangements for cure of the matter as are acceptable to the Contractor. If the District fails within the required time period to cure or make such acceptable arrangements for cure of the matter, the Contractor may stop the Work or terminate the Contract by giving additional written notice to the District, which notice shall be effective immediately upon receipt by the District. In the event the Contractor stops the Work or terminates the Contract pursuant to either subdivision (ii) or (iii) of the first sentence of this Section, the District shall be liable to the Contractor for any losses thereby reasonably incurred by the Contractor; provided that the Contractor shall not be entitled to recover any lost or foregone profits attributable to the portions of the Work not satisfactorily completed by the Contractor prior to stoppage of the Work or termination of the Contract.

PART 13. LAWS AND OTHER REQUIREMENTS.

Section 13.1 Liability for Non-Compliance with Laws. The Contractor at all times during the execution of the Work shall be and shall remain fully informed of all federal, State of California and local laws, ordinances, rules, regulations or other requirements that may in any manner affect those engaged or employed to perform any of the Work or the materials used in performing the Work, or that may in any way affect the performance of the Work. In addition, the Contractor at all times during the execution of the Work shall be and shall remain fully informed of all rules, regulations, orders, and other requirements of any public or private entity with jurisdiction over the Work. In performing the Work, the Contractor shall comply with, and give notices required pursuant to, all laws, ordinances, rules, regulations, and other requirements applicable to the Work as drawn and specified. The Contractor shall be liable for any violation of a law, ordinance, rule, regulation, or other requirement in connection with performance of the Work. If the Contractor observes that the Plans and Specifications in any respect do not conform with any applicable law, ordinance, rule, regulation or other requirement, the Contractor shall promptly notify the District Representative in writing. The Contractor shall bear all liability and costs, including any fines, arising from performance of any Work that the Contractor knew or reasonably should have known was contrary to any applicable law, ordinance, rule, regulation or other requirement, and the Contractor failed to notify the District Representative of the same a sufficient time in advance of performing the Work to permit the District to investigate and resolve the discrepancy.

Section 13.2 Applicable Regulations. The performance of the Work, including all construction and the materials and equipment used in connection with or incorporated into the Work,

shall, not as a limitation, conform to all applicable requirements of the regulatory provisions specified in this Section. Each of such specified regulatory provisions, as those may be amended from time to time, is hereby incorporated as an operative part of the Plans and Specifications, and Contractor shall maintain a current copy of each at the Project Site. In the event of any conflict between the requirements of the various specified regulatory provisions, or in the event of any conflict between the requirements of the specified regulatory provisions and the requirements of any other applicable provision of law, the most authoritative requirements shall govern and nothing in the Contract Documents shall be construed to permit work that does not conform with such requirements. The Contractor shall not be entitled to additional compensation for any Changes in the Work necessary to ensure compliance with the requirements of the specified regulatory provisions, and the cost of any such Changes in the Work shall be deemed to be encompassed within the Contract Amount. The specified regulations are as follows:

(i) Title 8 California Code of Regulations (Industrial Relations), Chapter 4 (Division of Industrial Safety), Subchapter 4 (Construction Safety Orders), commencing with Section 1500.

(ii) Title 19 California Code of Regulations (Public Safety), Division 1 (State Fire Marshal), commencing with Section 1.00.

(iii) Title 21 California Code of Regulations (Public Works), Division 1 (Department of General Services), Chapter 1 (Office of the State Architect), Subchapter 1 (Safety of Construction of Public Schools), commencing with Section 1.

(iv) Title 24 California Code of Regulations (the California Building Standards Code).

Section 13.3 Provisions Deemed Inserted. Each and every provision or clause required by law to be inserted in the Contract is hereby deemed to have been inserted, and the Contract shall be interpreted and enforced as though such provisions and clauses are expressly set forth herein. If, through mistake or otherwise, any required provision is not inserted or is not correctly inserted, then upon written request of either the District or the Contractor, the Contract shall be amended to make the insertion or correction. Any and all references in the Contract to laws, ordinances, rules, regulations or other requirements shall be deemed and construed to include all amendments, replacements and enactments thereto that are in effect as of the date of the Contract, as well as any later amendments thereto that do not materially alter the rights or obligations of the Parties.

Section 13.4 Equal Opportunity Employer. The Contractor represents and warrants that it is an equal opportunity employer and that it shall not, in connection with the Work, discriminate against any employee or applicant for employment in violation of any applicable federal, State of California, or local law, including, without limitation, on the basis of such person's race, religion, color, national origin, ancestry, sex, or age. Such policy of non-discrimination shall apply to all activities related to recruitment advertising, recruitment, initial employment, promotion, demotion, transfer, and layoff or termination.

Section 13.5 DVBE Participation. If the Special Provisions provide that the Contractor must comply with the provisions of this Section, then the Contractor must, following completion of the Work and as a condition to Final Payment, complete, execute, and submit to the District the "Certification Regarding DVBE Participation" form included in the Required Contract Forms.

Section 13.6 Tobacco-Free Facility. All properties and facilities owned, leased or operated by the District, including without limitation, the Project Site, are tobacco-free work places. It is strictly forbidden while on or in any District-owned or -controlled property or facility, including, without limitation, the Project Site, to smoke, chew, or otherwise use tobacco products. Any employee of the

Contractor or its subcontractors found in violation of these requirements will be required to permanently leave the Project Site and the Contractor shall not thereafter re-employ such person on the Project or permit such person to be present on or at the Project Site. The Contractor shall include this provision in all contracts with subcontractors and others performing any of the Work or providing labor, materials or services related to the Work, and each shall provide a copy of this provision to its employees on the Project.

Section 13.7 Drug-Free Facility. All properties and facilities owned, leased or operated by the District, including, without limitation, the Project Site, are drug-free work places. It is strictly forbidden while on or in any District-owned or -controlled property or facility to: (i) engage in the unlawful manufacture, dispensation, possession or use, including being under the influence, of any controlled substance; (ii) possess or use any alcoholic beverage; or (iii) use any illegal substance which may cause significant impairment of normal abilities. Any employee of the Contractor or its subcontractors found in violation of these requirements will be required to permanently leave the Project Site and the Contractor shall not thereafter re-employ such person on the Project or permit such person to be present on or at the Project Site. The Contractor shall include this provision in all contracts with subcontractors and others performing any of the Work or providing labor, materials or services related to the Work, and each, as well as the Contractor, shall provide a copy of this provision to its employees on the Project.

Section 13.8 Compliance with Labor Code Requirements. The Project is a "public works project" as defined in Section 1720 of the California Labor Code ("Labor Code") and, therefore, Part 7, Chapter 1, of the Labor Code is applicable to the Project. The Contractor must be, and shall be deemed and construed to be, aware of and understand the requirements of Labor Code Sections 1720 *et seq.* and 1770 *et seq.,* and Title 8 of the California Code of Regulations, Section 16000 *et seq*. (collectively, "Labor Laws"), which require the payment of prevailing wage rates and the performance of other acts in connection with public works projects. The Contractor acknowledges that the Project is subject to compliance monitoring and enforcement by the DIR. In any event, the Contractor, at no additional cost to the District, must comply with any and all applicable Labor Law requirements, including, without limitation, requirements for payment of Prevailing Wages, maintenance, inspection and submittal of payroll records, notice and posting requirements, *et cetera.* The Contractor must ensure that any and all subcontractors working under the Contractor comply with the Labor Laws and other public works requirements. The Contractor, at no additional cost to the District, must cooperate with the DIR, and the District in connection with Labor Law compliance matters. A contractor or subcontractor that has been debarred in accordance with the Labor Code, including, without limitation, pursuant to Sections 1777.1 or 1777.7, is not eligible to bid on, perform, or contract to perform any portion of the Work. Wage rates for the Work shall be in accordance with the general prevailing rates of per-diem wages determined by the Director of Industrial Relations pursuant to Labor Code Section 1770. Wage rates shall conform to those on file at the District's principal office, which are available for review upon request, and posted at the Project Site. The District will withhold payment to the Contractor necessary to satisfy civil wage and penalty assessment issued by the Labor Commissioner. The following Labor Code sections are by this reference incorporated into and are a fully operative part of the Contract, and Contractor shall be solely responsible for compliance therewith:

(i) Section 1735: Anti-Discrimination Requirements;
(ii) Section 1775: Penalty for Prevailing Wage Rate Violations;
(iii) Section 1776: Payroll Records;
(iv) Sections 1777.5, 1777.6 and 1777.7: Apprenticeship Requirements;
(v) Sections 1810 through 1812: Working Hour Restrictions;

(vi) Sections 1813 and 1814: Penalty for Failure to Pay Overtime; and
(vii) Section 1815: Overtime Pay.

Section 13.9 Requirements for Payroll Records. The Contractor must comply with all applicable provisions of Labor Code Section 1776, which relates to preparing and maintaining accurate payroll records, and submitting or making such payroll records available for review and copying by the District, the DIR's Division of Labor Standards Enforcement, and Division of Apprenticeship Standards. The payroll records must be certified, maintained at the principal offices of the Contractor, and submitted or made available as required by Labor Code Section 1776. The Contractor must inform the District of the location at which the payroll records are kept, including the street address, city and county, and must, within five business days, provide notice to the District of any change in such location. If the Contractor or any subcontractor fails to timely comply with requests for certified payroll records, it shall forfeit, as a penalty to the District, $100 for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated, and, in addition to penalties as provided by law, may be subject to debarment pursuant to Labor Code Section 1771.1. Timely provision by the Contractor of certified payroll records also shall be a condition precedent to the District's obligation to make any subsequent progress, final, Retention, or other payments to the Contractor pursuant to the Contract.

Section 13.10 Registration with DIR. If, at any time during the Project, the Contractor intends to use a subcontractor that was not listed in its bid (e.g., a subcontractor performing work costing less than one-half of one percent of the Contractor's total bid amount), then, before the subcontractor performs any work on the Project, the Contractor must provide written notice to the District that identifies the subcontractor and includes evidence that the subcontractor is properly registered with the DIR. The Contractor shall be responsible for monitoring the registration status of its subcontractors at all times during the course of the Project, and in the event any subcontractor is or becomes not duly registered, the Contractor shall: (i) prohibit the subcontractor from working on the Project; and (ii) provide written notice to the District informing the District of the subcontractor's registration status. Notwithstanding anything to the contrary, if at any time during the performance of the Work, the Contractor or any of its subcontractors is not duly registered pursuant to Labor Code Section 1725.5 (including, without limitation, if the registration expires or the DIR revokes the registration), then: (i) the District in its sole discretion may cancel the Contract and/or replace the Contractor or subcontractor with a contractor or subcontractor that is duly registered pursuant to Labor Code Section 1725.5; and (ii) the Contractor and/or subcontractor may be subject to penalties imposed by the DIR.

Section 13.12 Penalties for Violations of Labor Laws. In accordance with Labor Code Section 1775, the Contractor shall forfeit, as a penalty to the District, not more than $200 and, subject to limited exceptions, not less than certain amounts specified by law, for each calendar day, or portion thereof, for each worker paid less than prevailing wage rates as determined by the director of the DIR. The Contractor shall pay to each worker the difference between such stipulated prevailing wage rate and the amount paid to the worker for each calendar day or portion thereof for which the worker was paid less than the applicable prevailing wage rates.

Section 13.13 Assignment of Anti-Trust Claims. In accordance with Public Contract Code Section 7103.5, the Contractor, in entering into the Contract, hereby offers and agrees to assign to the District all rights, title, and interest in and to all causes of action Contractor may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, services, or materials pursuant to the Contract. Such assignment shall be made and become effective at

the time the District tenders Final Payment to the Contractor, without further acknowledgment by the Parties.

PART 14. DISPUTE RESOLUTION.

Section 14.1 Governing Law and Venue. The Contract and all rights and obligations arising out of it shall be interpreted and enforced in accordance with the laws of the State of California, notwithstanding any choice-of-law, conflict-of-law, or other provision of any federal, state, or other law or governmental requirement. Any and each arbitration, action, and other proceeding that arises out of the Contract shall be initiated and conducted only in an appropriate forum located within the County of Orange, California.

Section 14.2 Mediation and Arbitration. The provisions of Public Contract Code Section 9204, and, to the extent applicable, Public Contract Code Section 20104 *et seq.* (collectively, the "Dispute Resolution Provisions") shall apply to Contractor claims arising or resulting from the Contract (each a "Claim"). The Dispute Resolution Provisions are incorporated herein by this reference. The Dispute Resolution Provisions require that any such Claim be in writing, served by registered mail or certified mail with return receipt requested, and supported by reasonable documentation of the basis for the Claim. To the extent provided in Public Contract Code Section 9204, the Contractor may file Claims on behalf of its subcontractors of any tier. **THE CONTRACTOR MUST FILE ANY AND ALL CLAIMS PRIOR TO SUBMITTING TO THE DISTRICT AN INVOICE FOR FINAL PAYMENT FOR THE WORK.** The District shall respond in writing to each Claim within forty-five days and shall pay any undisputed portion of the Claim as required pursuant to the Dispute Resolution Provisions. If the Contractor disputes the District's response to a Claim, or the District does not timely respond to a Claim, the Contractor may submit to the District a written demand to meet and informally confer regarding settlement of the Claim. In such event, the District shall schedule such meeting to occur within thirty days following receipt by the District of the written demand. If, following such meeting, any portion of the Claim remains in dispute, the Parties shall submit the Claim to non-binding mediation as required by the Dispute Resolution Provisions. If a claim for $375,000 or less remains in dispute following such mediation, and a civil action is commenced to resolve the Claim, judicial arbitration of the Claim shall be required pursuant to Public Contract Code Section 20104.4. The Contractor should review Public Contract Code Sections 9204 and 20104 *et seq.* if the Contractor desires additional details regarding the Dispute Resolution Provisions.

Section 14.3 Costs and Expenses. With respect to any applicable mediation or arbitration, the Parties shall initially pay equal shares of any and all associated mediator or arbitrator fees; however, the prevailing Party in any such proceeding shall be entitled to recover such initial costs, in addition to other costs as specified herein, as an item of damage and/or recoverable cost. Notwithstanding the foregoing or anything else, each Party shall in all cases be responsible for paying its own attorneys' fees and other legal costs, including, without limitation, in connection with any mediation, arbitration, and/or litigation arising from the Contract.

Section 14.4 Continuation of Work. Notwithstanding anything in the Contract Documents to the contrary, in the event of any dispute between the District and the Contractor, or any dispute between the Contractor and any subcontractor or other third party, the Contractor shall not be permitted to cease performance of the Work, but the Contractor shall have the right to pursue all other remedies permitted pursuant to the Contract and applicable law. Any and each failure by the Contractor to comply this the requirements of this Section shall constitute a material breach by the Contractor of its obligations pursuant to the Contract.

(End of General Provisions.)



NAME OF SCHOOL:
Peters Canyon Elementary School

SCHOOL DISTRICT:
Tustin USD

ADDRESS:
26900 Peters Canyon Rd, Tustin, CA 92782

Complete Demo Main, and MPR Building.
System: HR4-20-NMR-CR

Complete Demo Canopy
System: HR4-20-NMR-CR

GUIDE: RE-ROOF SPECIFICATIONS

Juventino Arcos
Tustin Unified School District
Maintenance & Operations
1302 Service Rd.
Tustin, CA 92780

Project Site: Peters Canyon Elementary School – Main Building Wings 100, 200, 300, 400, and MPR Buildings

PROJECT SITES: Peters Canyon Elementary School

SECTION 07 52 00
COLD PROCESS MONOLITHIC BUILT-UP ROOFING

NAME OF SCHOOL: Peters Canyon Elementary School.
SCHOOL DISTRICT: Tustin USD.
ADDRESS: 26900 Peters Canyon Rd, Tustin, CA 92782
BUILDING: Main Building Wings 100, 200, 300, 400, and MPR

PART 1 - GENERAL

1.01. **GENERAL REQUIREMENTS**

A. The General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 01-General Requirements shall be read in conjunction with and govern this section.

B. The Specification shall be thoroughly comprehended by all parties concerned. Each Section may contain the work of any trade. The Contractor is solely responsible to make clear to the installing Subcontractor the extent of their Work.

1.02. **SUMMARY**

A. This Section includes requirements for supplying labor, materials, tools, and equipment to complete the Work as shown on the Drawings Architectural Division as specified herein including, but not limited to, the following:

1. Red Rosin paper
2. Inverted Cap Sheet (Underlayment or Buffer Ply)
3. Bonding Adhesive
4. Base/Interply(s)
5. Base Flashing
6. Chopped Glass Asphalt Emulsion
7. Base Coat
8. Primary Roof Coating
9. Walkways (AC Unit Service)
10. Granules

1. **Henry Specification #HR4-20-NMR-CR – Non-Insulated – Four-ply BUR Reinforced Monolithic Roof Surface over Nailable Deck Roofing System w/ Reflective Acrylic Topcoat Assembly**

Over a prepared deck surface mechanically fasten one layer of Henry 606 80# Premium SBS-Modified Mineral-Surfaced Underlayment. Install three plies of Henry 604 25# Fiberglass Base Sheet adhered with Henry 902 Permanent Bond Adhesive. Install Base Flashing with Henry 180 ModifiedPlus NP180gM4 adhered with 902 Permanent Bond Adhesive in transitions. Surface with Pro-Grade 197 Asphalt Emulsion reinforced with Henry 189 Fiberglass Roving. Finish with Pro-Grade 294 Premium Elastomeric Base Coat, White Armor Highly Reflective Granules, and Pro-Grade 280 Elastomeric White Roof Coating or other colors as specified. **Minimum dry film thickness (DFT) of 96 Mils.**

Specification System & Weights per 100 Sq. ft.	**Dry Weights**
Henry 606 80# SBS Modified Underlayment – Mechanically fastened	80 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Pro-Grade 197 Emulsion– 9 gallons per 100 sq. ft.	36 lbs.
Henry 189 Fiberglass Roving – 3 lbs. Per 100 sq. ft.	3 lbs.
Pro-Grade 294 Premium Elastomeric Base Coat – 2 gallons per 100 sq. ft	10 lbs.

Pro-Grade 280 Elastomeric White Roof Coating – 1 1/2 gallons per 100 sq. ft	8 lbs.
White Armor Highly Reflective Granules	20 lbs.
Pro-Grade 280 Elastomeric White Roof Coating – 2 gallons per 100 sq. ft	10 lbs.

Approximate Total Dry Weight: 255 - 275 lbs. (2.55 – 2.75 lbs./square foot)
Warranty: 20 Year

1.03. **DEFINITIONS**

A. Underlayment or Buffer Ply (Inverted Cap Sheet):
1. Henry 606 80# Premium SBS-Modified Mineral Surfaced Underlayment is a fire-rated cap sheet (base ply) mechanically fastened to a prepared wood deck,

B. Interply Adhesive:
1. Interply adhesive (Henry 902 Permanent Bond Adhesive) – 2 gallons per 100 ft^2/ply.

C. Interply:
1. Install three (3) layers of Henry 604 25# Fiberglass Base Sheet over underlayment or buffer ply.

D. Base Flashing:
1. NP180gM4 adhered with Henry 902 Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2/ply.

E. Surfacing
1. Asphalt Emulsion
   a. Henry Pro-Grade 197 Reinforced Asphalt Emulsion with chopped glass:
      1) Cover prepared surfaces with undiluted PG 197 Asphalt Emulsion impregnated with 189 Fiberglass Roving over prepared surface.
2. Basecoat
   a. Henry Pro-Grade 294 Elastomeric Base Coat and Sealant
      1) Cover cured and cleaned PG 197 Asphalt Emulsion Surface in one coat.
3. Granules
   a. White Armor Highly Reflective Granules
      1) Broadcast granules in the first coat of PG 280

   Topcoat(s):

   b. Henry Pro-Grade 280 Elastomeric White Roof Coating
      Cover PG 294 Elastomeric Base Coat and Sealant Surface (including broadcasted granules) in a **minimum** of one coat

1.04. **REFERENCE STANDARDS**

A. American Society for Testing and Materials (ASTM):
1. ASTM C920 - Standard Specification for Elastomeric Joint Sealants
2. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM D471 – Standard Test Method for Rubber Property – Effect of Liquids
4. ASTM D624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
5. ASTM D1117 - Standard Guide for Evaluating Nonwoven Fabrics
6. ASTM D1227 – Standard Specification for Emulsified Asphalt Used as Protective Coating for Roofing.
7. ASTM D1475 - Standard Test Method for Density of Liquid Coatings, Inks, and Related Products.
8. ASTM D1628 - Standard Test Methods for Chemical Analysis of Chromated Copper Arsenate
9. ASTM D1682 – Standard Methods of Test for Breaking Load and Elongation of Textile Fabrics
10. ASTM D1688 - Standard Test Methods for Copper in Water
11. ASTM D2196 - Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer.
12. ASTM D2263 - Methods of Testing Automotive Fabrics
13. ASTM D2370 – Standard Test Method for Tensile Properties of Organic Coatings.

14. ASTM D2697 – Standard Test Method for Volume Nonvolatile Matter in Clear or Pigmented Coatings.
15. ASTM D2939 - Standard Test Methods for Emulsified Bitumens Used as Protective Coatings.
16. ASTM D3019 – Standard Specification for Lap Cement used with Asphalt Roll Roofing, Non-Fibered, and Fibered.
17. ASTM D3409 – Standard Test Method for Adhesion of Asphalt-Roof Cement to Damp, Wet, or Underwater Surfaces
18. ASTM D3786/D3786M Standard Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method
19. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free
20. ASTM D6083 – Standard Specification for Liquid-Applied Acrylic Coating Used in Roofing.
21. ASTM E96 - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials
22. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
23. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
24. ASTM G21 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
25. ASTM C208 – Standard Specification for Cellulosic Fiber Insulating Board
26. ASTM D41/D41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
27. ASTM D93 - Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.
28. ASTM D1777 - Standard Test Method for Thickness of Textile Materials.
29. ASTM D3019 – Standard Specification for Lap Cement used with Asphalt Roll Roofing, Non-Fibered, and Fibered.
30. ASTM D3909 – Standard Specification for Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules.
31. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
32. ASTM D4479/4479M - Standard Specification for Asphalt Roof Coatings—Asbestos-Free
33. ASTM D4601/D4601M - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
34. ASTM D5147/D5147M - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
35. ASTM D5635/D5635M - Standard Test Method for Dynamic Puncture Resistance of Roofing Membrane Specimens.
36. ASTM D6164/D6164M - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements

B. California Building Code

C. California Energy Commission (CEC)
1. Title 24 Section 118(i)3

D. Cool Roof Rating Council

E. Environmental Protection Agency (EPA)
1. EPA Method 24

F. International Building Code Standard:
1. IBC Chapter 15: Roof Assemblies and Roof Top Structures.

G. National Roofing Contractors Association
1. NRCA Roofing Manual

H. OSHA: Occupational Safety and Health Administration - Washington, DC

J. SCAQMD – South Coast Air Quality Management
   1. VOC Standards

K. SMACNA Contractors – Quality Work & Professional Services

L. Underwriters Laboratories (UL):
   1. UL 790 – Standard Test Methods for Fire Tests of Roof Coverings

M. USGBC: US Green Building Council
   1. Leadership in Energy and Environmental Design; LEED Reference Guide, Version 4.0
   2. USGBC Project Calculation Spreadsheet; www.usgbc.org

1.05. **ADMINISTRATIVE REQUIREMENTS**

A. Coordination
   1. Do not allow access to installation areas by other trades during roof coating installation.

B. Pre-bid Meeting
   1. All manufacturer representatives interested in submitting a bid are required to attend a pre-bid conference ten (10) days prior to the bid opening.
   2. Substitution limitations
      a. Submit a Roof Manufacturer certification letter during the pre-bid meeting, signed by the manufacturer, stating alternative material is equivalent to the specified product.
      b. Submit independent laboratory testing information verifying physical properties meet the specified performance criteria.
      c. Products accepted as equal to the specified product will be considered an alternate and presented as a bid addendum 5 days prior to bid opening.
      d. No changes or substitutions to the specified product will be accepted after bid opening.

C. Pre-installation Conference: Before starting roof deck construction, conduct conference at Project site.
   1. Owner's Rep or Construction Manager to provide seven (7) days advance written notice ensuring attendance of the following key personnel:
      a. Owner, Architect, testing and inspecting agency representative, approved roofing installer's superintendent or foreman that is knowledgeable about specified system, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
   2. Discussion Topics:
      a. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
      b. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      c. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
      d. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
      e. Review governing regulations and requirements for insurance and certificates if applicable.
      f. Review temporary protection requirements for the roofing system during and after installation.
      g. Review roof observation and repair procedures after roofing installation.
      h. Review installation and coordination requirements for warranty eligibility prior to pre-applied roof coating installation.
      i. Review contract to ensure the full scope of work is covered.
   3. Deliverables
      a. Via email, Owner's Rep or Construction Manager to provide detailed notes from the Pre-installation conference and a copy of the project specification to all participants in attendance.

4. Prior to the start of installation, notify Manufacturer's inspector forty-eight (48) hours prior to job start, schedule changes and prior to application of surfacing and reflective coat.

1.06. **SUBMITTALS**

A. Provide submittals in accordance with Section 01 33 00 Submittal Procedures.

B. Listed Manufacturer's Submittals

1. Action Submittals
   a. Product data
      1) Guide specification
      2) Safety data sheets
      3) Standard details
      4) Installation Instructions
      5) Technical data sheets
      6) Health Declaration Product Certificates (HPD)
   c. Shop Drawings: For Manufacturer's roofing system. Include roof plans, sections, details, and attachments to other work Certificates
   d. Material List of all items to be furnished and installed under this section.
   e. Fire Hazard Classification - Provide a letter certifying that roof membrane assembly qualifies for UL Class A fire hazard classification for the type of substrate(s), slope(s), insulation(s) (when applicable) and membrane(s) specified for this installation. Include a copy of the UL listing.
2. Informational Submittals
   a. Certification stating assembly components are supplied and warranted by single source Manufacturer:
      1) Certification stating Roof Manufacturer meets the following standards:
         a) Part of a single source manufacturer for Emulsions, Mastics, Roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.
         b) Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.
         c) Each manufacturing facility must implement a full-time quality control and oversight operating system.
         d) Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.
         e) Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.
      2) Sarbanes-Oxley Act (SOX) compliant with public access to the published annual report.
      3) Statement stating Installer is authorized by the Roofing Manufacturer to complete Work as specified.
   b. Applicator Approval:
      1) Provide letter from manufacturer of roofing materials stating that applicator is acceptable to manufacturer.
   c. Sample Warranty(s):
      1) Provide copies of all applicable manufacturer's warranties
3. Closeout Submittals
   a. A daily work log from the contractor is to be provided to the Manufacturer.
   b. Maintenance Data: For roofing system to include in maintenance manuals.
   c. Final Warranty

C. Submittal of potential equal manufacturers not listed in specification:

1. Submittals shall be made not less than ten (10) days prior to bid date. Primary roof systems that have been reviewed and accepted as equals to the specified roof system will be listed in an addendum prior to bid date; only then will equals be accepted at bidding. All submittals which do not conform to the following requirements will be rejected.
2. Furnish in triplicate:
   a. 8" x 10" mockup samples of the complete roof membrane and flashing membrane assemblies.

b. Latest edition of the roofing system manufacturer's specifications and installation instructions.
c. Detailed descriptive list of the materials proposed for use.
d. Copy of UL approval of the proposed roofing system for the required assembly and slope. No other testing agency approvals will be accepted.
e. Letter from the proposed primary roofing manufacturer confirming the number of years it has directly manufactured the proposed primary roofing system under the trade name and/or trademarks as proposed.
f. Complete list of material physical properties including solids. The owner reserves the right to request documentation from a nationally recognized independent lab certifying physical properties.
g. Copy of manufacturer's inspection form.
h. Qualifications of manufacturer's inspector(s)
i. Proposal from manufacturer for site specific quality control program.
j. Sample copy of the specified guarantee including terms and procedures for renewal.
k. Documentation that the manufacturer meets requirements of 1.07A.

1.07. **QUALITY ASSURANCE**

A. Manufacturer Qualifications

1. Manufacturer must not issue warranties for terms longer than they have been manufacturing and supplying specified products for a similar scope of Work.
2. Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.
3. Part of a single source manufacturer for roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.
4. Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.
5. The Manufacturer must furnish as a single source all primary roofing materials with manufacturer's labels and have current listing in Underwriters Laboratory Directory. Materials must bear UL Classification marking on bundle, package or container indicating that materials have been produced under UL's Classification and Follow-up Service.
6. Each manufacturing facility must implement a full-time quality control and oversight operating system.
7. Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.
8. Sarbanes-Oxley Act (SOX) compliant with public access to the published annual report.
9. The manufacturer shall employ a field inspector available for periodic inspections throughout construction and final inspections. Inspection reports are to be available to the Owner Representative on request.
10. The Manufacturer shall be a member in good standing with the Southern California Roofing Contractors Association, National Roofing Contractors Association, Construction Specifications Institute, and California Association of School Business Officials.

B. Contractor Qualifications

1. Authorized by Roofing Manufacturer to complete Work as specified.
2. 5 years minimum experience in Work as described in this section.
3. The Contractor must provide a list of ten (10) projects of equal size and difficulty per the specified roof system type.
4. The Contractor must provide a supervisor that can communicate with the Manufacturer's Inspector and Owner Representative.
5. Contractor must provide knowledgeable foreman who understands all aspects of the specification.
6. Contractor must provide:
   a. California Contractors License (California Projects Only).

1.08. **DELIVERY, STORAGE, AND HANDLING**

A. Delivery Requirements

1. Deliver material in manufacturer's original sealed and labeled containers and in quantities required allowing continuity of application.

B. Storage Requirements

1. Store materials as recommended by the Roofing Manufacturer and conforming to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, MSDS sheets, Product Data sheets, product labels, and specific instructions for personal protection.
2. Do not heat or store material containers at temperatures greater than 120ºF (49ºC).
3. Store materials out of direct exposure to the elements.
4. Product should be stored in closed containers.
5. Solvents:
   a. Keep solvents away from open flame or excessive heat.
6. Roll Goods:
   a. Store roll goods on a clean flat surface.
   b. When ambient temperatures are below 40°F (4°C), rolled materials must be stored in protected or heated areas and brought to the roof as needed for application.
7. Asphalt Adhesives:
   a. Store asphalt adhesives and cement in a heated area prior to use in cold weather.

C. Handling Requirements

1. Handle material in such a manner as to preclude damage and contamination with moisture or foreign matters.
2. Materials that are found to be damaged or stored in any manner, other than as stated above, shall be automatically rejected and shall be removed and replaced at the contractor's expense.
3. Provide adequate ventilation for protection from hazardous fumes.
4. Refer to the Roofing Manufacturer's published literature.

1.09. **SITE CONDITIONS**

A. Protection/Safety Requirements:

1. Do not overload the structure with building materials.
2. It is the responsibility of the installing Subcontractor to protect all surfaces not included in scope of Work from overspray including, but not limited to, windows, doors, adjacent areas, and vehicles.
   a. Installing Subcontractor to post signs noting potential overspray hazard within 400ft (122 M) of applications.
3. The applicator will be held responsible for any damage caused to roof top equipment, roof penetrations, clogged drains (if not identified prior to starting the work) and damage to the building and grounds resulting from the execution of his work.
   a. All air intake ventilation equipment shall be turned off to prevent fumes from entering the building.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.
6. Lock valves on tankers when not attended.
7. Cover or arrange air intakes to be turned off during the application of solvent-based materials.
8. No smoking signs must be posted as mandated by local fire ordinances.

B. Environmental Requirements.

1. Do not perform Work over saturated insulation or saturated substrates.
2. Ensure all preparation Work is completed prior to installing roof.
3. All equipment shall be grounded during operations.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Never apply water-based emulsions when the ambient temperature is below 50°F (16°C) before the emulsion has cured to a tack-free black surface. Never apply within 6° of dewpoint. High humidity, fog and dew will greatly extend the time for emulsions to cure.
6. Before installing acrylic coatings, test the temperature of the roof with an infrared thermometer.

a. If temperature exceeds (>140 °F / 60 °C), consult a Henry Technical Consultant regarding alternate installation requirements for acrylic coating.
1) Do not install as specified in 3.08 – Surfacing Acrylic Coating.

7. Do not apply material during precipitation or when rain is expected during or after application, until the material is fully set.
a. Follow Roofing Manufacturer's installation protocol.
8. Never apply solvent-based adhesives or coatings to a wet surface.
9. Do not perform Work on surfaces that are wet.

1.10. **WARRANTY**

A. Manufacturer Warranty: Twenty (20) Years from date of purchase
1. Gold Seal Warranty:
a. Warrants system and installation; provides material and labor costs for repair for a period of twenty (20) years from the date of installation completion as a result of any of the following:
b. Manufacturing product defect
c. Faulty Installer's workmanship

PART 2 - PRODUCTS

2.01. **ASSEMBLY MANUFACTURER**

A. Henry® a Carlisle Company
336 Cold Stream Rd.
Kimberton, PA 19442
(800) 486-1278
www.henry.com

2.02. **PERFORMANCE CRITERIA**

A. Energy Performance:
1. Elastomeric White Roof Coating (ASTM D-6083)
a. Initial solar reflectance, initial (ASTM C1549): 0.88
b. Solar reflective index (SRI): 111
c. Thermal emittance, initial (ASTM C-1549): 0.90
d. Meets California Energy Commission – Title 24, Sec. 118

B. Tested fire response characteristics (ASTM E 108 or UL 790): Class A

2.03. **PRODUCT DELIVERY**

A. Bulk delivery material shall be accompanied by a Henry Company bill of lading.

2.04. **MATERIALS**

A. General: Refer to Project Scope of Work for applicable product references.

B. Red Rosin paper (wood decks only) -1 ply

C. Underlayment or Buffer Ply: Meeting the following requirements
1. Henry 606 80# Premium SBS-Modified Mineral-Surfaced Underlayment, reverse rolled (ASTM D-3909)
a. Color/Appearance: Black Fabric
b. Flash Point: 212°F minimum (ASTM D-93)
c. Max VOC: 0.00 lbs./gal
d. Max VOS: 0.00 lbs./gal
e. UL Certified as a component within Class "A" and "B" Fire Rated Roof Coverings.

D. Interply: Meeting the following requirements
1. Henry 604 25# Fiberglass Base Sheet (ASTM D-4601)
a. Nominal 25# asphalt coated base sheet
b. Flash Point: 500º F

c. Tensile Strength: 65 lbs. MD – 55 lbs. CD
d. FM Approved
e. UL Certified as a component within Class “A” and “B” Fire Rated Roof Coverings.

E. Interply Adhesive: Meeting the following requirements
1. Henry 902 Permanent Bond Adhesive – low odor, modified and rubberized cold adhesive (ASTM D-3019):
a. Color/Appearance: Black Liquid
b. Asphalt by weight: 52% (ASTM D-4479)
c. Solids by weight: 75%±.2% minimum (ASTM D-4479)
d. Flash Point: 105°F minimum (ASTM D-93)
e. Lap Peel Strength: 48.9 lbf/in. min. (ASTM D-3019)
f. Max. VOC: 250 grams/liter (ASTM D-3960)
g. Max VOS: 2.08 lbs./gal
h. Specific Gravity @ 77º F (25ºC): 1.08
i. Weight Per Gallon: 9.0 – 9.2 lbs. (ASTM D-1475)
j. FM Approved
k. UL Certified as a component within Class “A” and “B” Fire Rated Roof Coverings.

F. Base Flashing: Meeting the following requirements
1. Henry Modified Plus NP180gM4
a. Tensile Strength - MD 100 lbf/in. - CD 80 lbf/in.
b. Elongation @ 0°F (-18°C) -MD 40% - CD 40%
c. Tear Resistance - MD 100 lbf/in. - CD 70 lbf/in.
d. Thickness 140 Mils ± 10%
e. FM Approved
f. UL Certified as a component within Class “A” and “B” Fire Rated Roof Coverings.

G. Asphalt Emulsion - Meeting following requirements:
1. Pro-Grade 197 Asphalt Emulsion
a. ASTM D-1227 Type III, Class I
b. Color. Black
c. Solids Content by Volume 49-53% (ASTM D-2697)
d. Viscosity @ 77°F 8000-15000 cps (ASTM D2196)
e. Density @ 77°F
f. Weight by Gallon 8.5-9.1 lbs./gal (ASTM D-1475)
g. Solids Content by Volume: 49-53% (ASTM D-2697)
h. FM Approved
i. Miami-Dade Certified
j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

H. Fiberglass Roving (Emulsion Reinforcement): Meeting the following requirements:
1. Henry 189 Fiberglass Roving:
a. Appearance: Ropelike strands
b. Color: White
c. Fiber Diameter: 6 microns (min)
d. Flashpoint: >212ºF
e. Maximum VOS: 0 lbs./gal
f. Maximum VOC: 0 g/l

I. Base Coast & Sealer- Meeting following requirements:
1. Pro-Grade 294 – Base Coat & Sealer
a. Appearance: Gray, fluid
b. Elongation: >250% (ASTM D-2370)
c. Solids Content by Volume: >48% (ASTM D-2697)
d. Tensile Strength, Initial: >150 psi (ASTM D-2370)
e. Viscosity (Brookfield): 21,000-28,000 cPs (ASTM-2196)
f. VOC Content (maximum): 50 g/l (APA Method 24)
g. Weight per Gallon: 10.5 – 11.4 lbs. (ASTM D-1475)

h. FM Approved
i. Florida Approved
j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

J. Elastomeric White Roof Coating - Meeting following requirements:
1. Pro-Grade 280 – Elastomeric White Roof Coating (ASTM D-6083)
a. Appearance: White
b. Elongation: >250% (ASTM D-2370)
c. Elongation, after 1000 Hours Aging: >230% (ASTM D-2370)
d. Tear Resistance: > 80 lbs./in. (ASTM D-624)
e. Tensile Strength, Initial: >240 psi (ASTM D-2370)
f. Flash Point: Non-Flammable
g. Fungi Resistance: Zero Rating (No Fungi) – (ASTM G-21)
h. Low Temperature Flexibility, after 1,000 Hours Aging: Pass (no Cracking or Checking) – (ASTM D-6083)
i. Solids Content by Volume: >52-56% (ASTM D-2697)
j. Viscosity (Brookfield): 35,000-48,000 cPs (ASTM-2196)
k. VOC Content (maximum): 50 g/l (EPA Method 24)
l. Water Swelling, Mass %: <20% (ASTM D-471)
m. Water Vapor Permeance: <50 perms (ASTM E96)
n. Weight per Gallon: 11.0 – 11.3 lbs. (ASTM D-1475)
o. Solar Reflectance, Initial: 0.88 (ASTM C-1549)
p. Solar Reflectance, 3 Yr.: 0.73 (ASTM C-1549)
q. Thermal Emittance, Initial: 0.90 (ASTM C-1549)
r. Thermal Emittance, 3Yr.: 0.87 (ASTM C-1549)
s. Solar Reflectance Index (SRI), Initial: 111 (ASTM E-1980)
t. Solar Reflectance Index (SRI), 3 Yr.: 89 (ASTM E-1980)
u. FM Approved
v. Florida Approved
w. Miami-Dade Certified
x. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering
y. California Energy Commission – Title 24, Sec. 118
z. Cool Roof Rating Council (CRRC) Rated
aa. LEED Credits

K. Miscellaneous Products & Accessories
1. Primers - Meeting the following requirements:
a. Henry 104Q QuikDry® - Asphalt Spray Primer:
1) Complies with ASTM D-41, and Federal Specification SS-A-701B.
2) Appearance: Black Liquid
3) Base: Air blown asphalt
4) Color: Black
5) Flash Point: 138ºF Maximum VOC: 550 g/l
6) Maximum VOS: 4.59 lbs./gal
7) Solids by Volume: 38.8%
8) Solids by Weight: 44.8%
9) Weight: 7.34 lbs./gal
b. #910 – Asphalt Primer:
1) Complies with ASTM D-41
2) Color: Black
3) Appearance: Black Liquid
4) Weight: 7.5-7.9 lbs./gal
5) Asphalt by Weight: 60-65%
6) Flash Point: >105ºF
7) Maximum VOS: 2.9 lbs./gal
8) Maximum VOC: 350 g/l
c. Prime-Tek Metal Primer & Rust Inhibitor (for coating applications)
1) Color/Appearance: White
2) Application Temperature: 50ºF to 110ºF

3) Solids by Weight: 45% +/- 2%
4) Solids by Volume: 37% +/- 2%
5) Maximum VOC: <100 g/l
6) Weight: 9.8 lbs./gal

2. Self-Adhered Base Sheet: Meeting the following requirements
   a. #600 Ruftac – 75 mil - SBS modified self-adhesive membrane
      1) Complies with ASTM D-1682
      2) Color: Black
      3) Appearance: Fabric with Adhesive Backing
      4) Application Temperature: 50ºF and rising
      5) Elongation: 85% MD
      6) Flash Point: 430ºF
      7) Maximum VOS: 0 lbs./gal
      8) Maximum VOC: 0 g/l
3. Flashing Cement - Meeting the following requirements:
   a. Pro-Grade 167 – Extreme Rubberized Flashing Cement:
      1) Complies with ASTM D-4586 & ASTM D-3409
      2) Appearance: Black Thick Paste
      3) Application Temperature: -20ºF to 140ºF
      4) Consistency: Trowel Grade
      5) Flash Point: 105ºF
      6) Underwater Adhesion: 100%
      7) Maximum VOC: 275 g/l
      8) Weight: 8.5-9.5 lbs./gal
      9) Miami-Dade Certified
      10) Can contribute to LEED certification credits
4. Joint Sealant - Meeting following requirements:
   a. Henry 289 - White Roof Sealant
      1) Complies with ASTM C-920, Class 25
      2) Color: White
      3) Appearance: Paste/mastic
      4) Application Temperature: 50ºF and rising
      5) Flash Point: > 212ºF
      6) Maximum VOS: 0.42 lbs./gal
      7) Maximum VOC: 50 g/l
      8) Weight: 11.4-11.8 lbs./gal
      9) Florida Approved
      10) Miami-Dade Certified
5. Reinforcement Fabrics: Stitch bonded, high performance fabric reinforcement sheets - Meeting the following requirements:
   a. #195 Polyester Fabric:
      1) Color: White to Yellow White
      2) Weight: 3.0 oz./sq. yd.
      3) Elongation: 61-63% (ASTM D-1682)
      4) Mullen Burst: 176.8 lbs. (ASTM D-3786)
      5) Tensile Strength: 57.1 lbs. (ASTM D-1682)
      6) Trapezoidal Tear Strength: 16 lbs. (ASTM D-1117)
      7) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      8) Maximum VOS: 0 lbs./gal
   b. #196 Polyester Fabric:
      1) Color: White to Yellow White
      2) Weight. 2.9 oz./sq. yd.
      3) Elongation 25.8% (ASTM D-1682)
      4) Trapezoidal Tear Strength 14.2 lbs. (ASTM D-1117)
      5) Tensile 41 lbs. (ASTM D-1682)
      6) Mullen Burst 127 lbs. (ASTM D-3786)
      7) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      8) Maximum VOS: 0 lbs./gal
6. Repair Fabrics:

a. Fiberglass - Meeting the following requirements:
1) #183 Yellow Resin Coated Glass Fabric
a) Complies with ASTM D-3019, Type III
b) Appearance: Roll Mesh Fabric
c) Color: Yellow
d) Flash Point: > 212ºF
e) Maximum VOC: 0 g/l
f) Maximum VOS: 0 lbs./gal
g) Mesh Size: 20 x 10 Thread Count
h) Tensile Strength Film (Initial): 75 lbs./inch

7. White Armor Highly Reflective Granules
a. Color: White
b. Bulk Density: 90-100 lbs./cu ft.
c. UL 790 Class "A" Fire Rating
d. FM Standard 4470 for Class 1 Fire, Windstorm & Hail Classification Approval
e. CRRC Rated – Prod ID 0626-0005
f. California Title 24 Compliant
g. SPFA Accreditation
h. ICC-ES
8. Walkways or Walkpads
a. Built in place
b. Prefabricated by Carlisle
9. Approved mechanical fasteners
10. Wolmanized/Pre-Treated wood nailers
11. Replacement metal to be 24-gauge Bonderized sheet metal
a. Metal edging to have minimum ¼" rise.
b. All flanges to be 4 inches with full corners.
c. Pitch pans
12. Lead Flashings for pipes to be minimum 4 oz. – factory or field soldered.
13. Lead sheets (30" x 30") for drains
14. Josam, Smith, or Zurn drains and overflows
15. Cant strips ASTM C-208

PART 3 - EXECUTION

3.01. **GENERAL**

A. Professional knowledge and understanding of Henry Company's Product Data is part of this specification.
B. Tear off the existing roof system.
C. Do not tear off or remove any more roof than can be replaced the same day.
D. Provide the price per plywood sheet (material and labor) to the Owner's Representative.
E. Repair or replace damaged or rotted plywood on the wood deck. Before repairing wood damage, verify and obtain approval from the Owner's Representative (Tustin USD supervisor).
F. Furnish and install a wood skirt around the AC units. (Note: Double cans are not acceptable)
G. Furnish and install 24 GA skirt metal, galvanized, around the AC units, roof hatch, and mechanical equipment.
H. Furnish and install a new edge metal, 24 GA, Bonderized with a continuous click.
I. Furnish and install lead flashing for pipe penetration and wall supports.
J. Furnish and install 30" x 30" lead sheets on drains.
K. Furnish and install Dura-Blok for conduits or pipes on top of the reflective coating. (Note: Dura-Blok painted or set in chopped glass or coating is not acceptable.)
L. Install cricket system on AC units and Skylights.
M. Install two walking pads per AC unit.
N. Remove, protect, and reinstall coping metal. Any coping metal damaged by the contractor needs to be replaced.
O. Test interior drains to confirm they flow freely. Immediately notify Owner's Representative if any corrections are necessary.
P. Protect drains from gravel plugs or debris.

3.02. **EXAMINATION**

A. Verification of Conditions

1. Verify substrates are in accordance with Roofing Manufacturer requirements and as specified in this Section prior to roof installation. Commencement of Work indicates installer acceptance of the substrate.
    a. Verify that surfaces are sound, dry, clean, and free of oil, grease, dirt, excess mortar, frost, laitance, loose and flaking particles, or other contaminants.
    b. Verify substrates are continuous and secured.
    c. Verify metal flashings, wood blocking, skylights, scuppers, gutters, penetrations, and structures located within area of Work are leak free and in good working condition.
    d. Verify insulation and roofing membrane are not damaged or previously saturated with water.

B. Preinstallation Testing

1. Moisture detection survey, as applicable
    a. Visual inspection
    b. Moisture analysis, choose from the following:
        1) Infrared Thermography
        2) Nuclear Scan
        3) Electric Capacitance / Impedance Testing
        4) Roof core cut samples

C. Evaluation and assessment

1. Verify roof areas promote positive drainage. Contact Roofing Manufacturer for ponding area repair procedures.
2. Report in writing any unsatisfactory conditions that cannot be warranted.

3.03. **PREPARATION**

A. Protection of In-Place Conditions

1. Protect areas and surfaces not included in scope of Work against damage or soiling.
2. Secure protective coverings against wind and vent area if used in conjunction with applications preventing collection and moisture.
3. Post signs noting potential overspray hazard within four hundred (400) feet of applications.
4. Turn off air-intake ventilation equipment to prevent fumes from entering the building.
5. Post “No Smoking” signs near roof coating installation until vapors dissipate.

B. General Preparation:

a. Repair and/or re-nail roof sheathing where necessary.
b. Cover gaps of ¼” or more between sheathing board with flat sheet metal stock nailed.
c. Double canted curbs to be skirted around all sides of platform with minimum 15/32” CDX plywood. Double canted curbs are not accepted.
d. Prefabricated metal curbs and cants to be sheathed or skirted with minimum 15/32” CDX Plywood.
e. Contractor to replace deteriorated sheathing with new to match existing unless specified otherwise under Scope of Work.

3.04. **INSTALLATION: GENERAL REQUIREMENTS**

A. General

1. Install roofing products in accordance with the roofing system manufacturer’s details, application guide and scope of work for the site and the requirements as outlined below.

B. Valley and Waterways:

1. Install an extra layer of the specified glass base set in a full-width application of # 902 permanent bond adhesive in valleys, drains, and waterways.

C. Primer:

1. Prime metal or lead flanges (All jacks, edge metal), concrete and masonry surfaces with a uniform coating of #910 Penetrating Asphalt Primer

D. Adhesives, primer, emulsion, reflective coat and sealants:

1. Thinning or alterations is not permitted.

E. Drains:
   1. Clean all drains and remove clamp ring, dried mastic and any other loose material. Prime with 910 Penetrating Asphalt Primer and aloe to dry, install minimum 30" square lead in drains set in 167 Extreme Rubberized Flashing Cement.

F. Caulking
   1. Wire brush and prime.
   2. Replace with compatible Sealant or Flashing Cement.

G. Conduit and Pipe Supports:
   1. Lift all supports for conduits and other pipes.
   2. Install Dura-Blok for conduit or pipes on top of reflective coating.
   3. Reinforce under block with one layer of 606 80# Granulated Cap Sheet cut 6 inches larger in all directions of block, granules side up, set in generous application of specified mastic after installation of Monolithic surfacing and roof coating.
   4. Loosen brackets so pipes can expand and contract freely.

H. Roof Coatings:
   1. Storage and Handling
      a. Roof coating may settle during storage.
      b. Mix roof coating prior to use with drill and mixer blade until consistent viscosity is achieved.
   2. Roof Marking and Protection
      a. Measure and mark area prior to roof coating installation.
      b. Contact the Roofing Manufacturer for roof marking instructions.
         1) Coverage rates are theoretical and do not account for material loss due to spraying, surface texture, and waste.
         2) Install a test patch to verify coating achieves millage requirements.
         3) Adjust application rates based on test patch results to meet specified requirements.

I. Walkways:
   1. Install walkways in 4' sections allowing 2" spacing between sheets.
   2. Cut and trim pieces as required to fit conditions.
   3. Set walkway in spot applications of PG 167 - All Weather Flashing Cement.
   4. Install two walking pads per AC unit and roof access.

J. Walls:
   1. Wood walls: 1 ply of 606 80# Granulated Cap Sheet with 902 Permanent Bond Adhesive at a rate of 2 gallons per square granules exposed. Apply one ply of 604 Fiberglass interply adhered with **902** Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2.
   2. Concrete walls: Install one layer of 195 or 196 polyester fabric embed in PG 197 Asphalt Emulsion at a rate of 4 gallons per 100 ft^2.
   3. Contact a Henry Technical Representative to ensure you receive the right information for the specifications or about specific applications.

K. Curbs
   1. Apply one ply of 604 Fiberglass interply adhered with **902** Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2.
   2. Install one ply of 606 80# Granulated Cap Sheet with 902 Permanent Bond Adhesive at a rate of 2 gallons per square granules exposed fastened with scattered nails.
   3. Double canted curbs to be skirted around all sides of platform with minimum 15/32" CDX plywood. Double canted curbs are not accepted.
   4. Prefabricated metal curbs and cants to be sheathed or skirted with minimum 15/32" CDX Plywood.
   5. Contractor to replace deteriorated sheathing with new to match existing unless specified otherwise under Scope of Work.
   6. Mechanical Metal Curbs:
      a. Prime surface with 910 Asphalt Primer.
      b. Install a layer of HE600 Ruftac and 1 layer of polyester with PG 197 Asphalt Emulsion at a rate of 4 gallons/100 ft^2.

L. Equipment:
   1. Roof coating pumps and spray guns - air-atomized or airless type.
      a. The pump must be able to deliver at least 800 to 1000 psi at the spray gun tip.
      b. The tip must be .100 size with 80º fan "ten eighty" tip.

c. The hose diameter must be at least 3/4" I.D, with the last 50' being 1/2" I.D. For hose lengths longer than 450', 1" I.D. is recommended.

3.05. **INSTALLATION: MEMBRANE APPLICATION – COLD PROCESS MONOLITHIC ROOFING**

A. Application:
1. Details as specified for each particular roof system or project are to be followed as thay may vary. Prior to application cut the rolls into lengths suitable for installation and lay flat to eliminate curl. Unless otherwise specified, the base ply is laid with 2" side laps and 4" end laps and nailed, spot-adhered or fully adhered with cold application cement or hot asphalt. Subsequently plies are completely adhered, cold or hot method.

B. (Wood decks only.) Install one layer of rosin sheathing paper over the wood deck. Lap each sheet 2” and nail sufficiently to hold it in place.

C. Underlayment or buffer:
1. Install 606 80# inverted cap sheet granule side down with 2” side laps and 4” end laps.
2. Apply the first sheet of underlayment with a 12” width and the remaining sheets full width.
3. Nail underlayment through one inch tin tabs at side laps 8” on center and 16” on center, staggered in two rows 12” from each edge. Fasteners to be sufficient length to penetrate deck ½ inch.

D. INTERPLY
1. TO COMPLETE 3-PLY ASSEMBLY: Over the base ply, apply three **604** Fiberglass interply sheets set in a uniform application of **902** cold-applied cement at a rate of 2 gallons per 100 ft^2. Apply the first sheet with an 18” width, then over that, a full-width piece. Install the remaining sheets full-width overlapping preceding sheet 19”. On slopes greater than 1½”:12”, back nail interply sheets 2” from top edge, 12” on center. On slopes over 3” in 12”, install interplies parallel to slope blind nailing 4” end laps only, 6” on center.

E. Before the end of each day, roll the membrane with a weighted roller (75 lb. minimum). Provide water stops and seal all terminations.

F. Allow 7 days to dry and cure.

3.06. **INSTALLATION: BASE FLASHING**

A. Wood walls:
1. Install ModifiedPlus NP180gM4 with 902 Adhesive at a rate of 2 gallons/100 ft^2. Extend 4” onto the roof deck. Secure top of flashing with Simplex nails every 12” OC.

B. Concrete, brick or block walls:
1. Install ModifiedPlus NP180gMA with 902 Adhesive at a rate of 2 gallons/100 ft^2. Extend 4” onto the roof deck. Secure top of flashing with Simplex concrete nails every 12” OC.
2. Prime wall surface at least 3" above termination edge of the base flashing as required for the project.
3. Over completed base flashing trowel a 5-inch-wide layer of Flashing Cement 1/8” thick to completely cover nails and top edge of base flashing.

3.07. **INSTALLATION: SURFACING (MONOLITHIC SYSTEM)**

A. After 902 Adhesive has thoroughly cured (no solvent odor is evident and laps cannot be pulled apart), sweep or pressure blow dust and debris from the roof surface to provide a clean surface. Hose and/or scrub off with water any residue accumulation.

B. Protect adjacent walls not scheduled for emulsion and reflective coating. Protect equipment, roof top units, etc. from overspray.

C. Cover prepared surfaces with PG 197 Asphalt Emulsion at rate of 9 gallons per 100 ft^2. to achieve 145 wet mils (79 dry mils). Evenly blend emulsion with ¾" Henry 189 Fiberglass Roving reinforcing at a rate of 3 lbs. per 100 ft^2 sprayed with equipment approved by Henry Company. Tufting of the glass fibers is not acceptable.

D. Spray emulsion in a pattern into laps of membrane so that when system is dry, there are no voids or bridging of glass over any seam of the membrane.
E. Spray base flashings and other designated surfaces with the Monolithic System.
F. Allow 7 - 10 days to dry and cure in hot, dry weather, and 10-14 days in cold weather. Contact a Henry Technical Representative with any questions.

3.08. **INSTALLATION: REFLECTIVE COATING**

A. Allow emulsion surfacing to cure. Clean the surface of dust, debris, and power wash to remove oils and stains. Scrub out any pockets of residue.
B. Apply Pro-Grade 294 Base Coat at a rate of 2 gallons per 100 ft^2 per coat, allow to dry cure 100%.
C. Apply Pro-Grade 280 White Elastomeric Roof Coating at a rate of 1 1/2 gallons per 100 ft^2 per coat. Broadcast 20 lbs. of ceramic granules per 100 ft^2 into wet 280 Topcoat over the entire surface.
D. Apply Pro-Grade 280 White Elastomeric Roof Coating at a rate of 2 gallons per 100 ft^2 per coat.
E. When applying base and topcoat, allow to dry thoroughly for a minimum of 24 hours between coats.
F. Any areas that peel must be redone before the project is considered complete.

3.09. **INSTALLATION: DETAILING AND FLASHING**

A. Cant Strips:
1. Install cant strip at all horizontal to vertical transitions.
2. Nail or set in mastic. Set to provide smooth transition without gaps.
3. Miter corners.
4. At scuppers bevel cant strip starting 8" back from outlet.

B. Cool – Cold Weather Applications:
1. Roll the membrane with a 75 lb. (34kg) (minimum) weighted roller within 30 minutes to 4 hours of application during temperatures of less than 58 degrees.
2. Provide waterstops and seal all terminations at the end of each day.
   a. Broom over all applied membranes at the end of the day.
3. Provide waterstops and seal all terminations at the end of each day.
   a. Broom over all applied membranes at the end of the day.

C. Coping Joints
1. Clean coping joints.
2. Prime 3 inches on both sides of joint and seal joint with 6-inch minimum layer of #600 Ruf-Tac.

D. Drains:
1. Clean all drains and remove clamp rings, dried mastic and any other loose material.
2. Prime with 910 asphalt primer and allow to dry.
3. Install minimum 30" square leads in drains set in Flashing Cement.
4. Replace broken or missing clamp rings, bolts or fasteners and drain bonnets with new.
5. Complete drains the same day.

E. Equipment Pads:
1. Install one layer of #600 Ruftac over equipment pads before installing metal pans.

F. Metal flanges (all jacks, edge metal, etc.):
1. Prime concrete and masonry surfaces with a uniform coating of asphalt primer.

G. Pipe Penetrations:
1. Set lead flashing flange over base plies set in Flashing Cement.
2. Seal with 2 plies of 604 Base Sheet with 902 Adhesive. First ply: 20" x 20". Second ply: 36" x 36".
3. When specified in project's Scope of Work, install storm collars on all pipe penetrations and jacks.
4. Use Ruftac 20" x 20" and a layer of 36" x 36" 195 or 196 polyester fabric with 197 Asphalt Emulsion at a rate of four (4) gallons per 100 ft^2 as an added layer when installing lead flanges over the 604 25# Base Sheet.

H. Sheet Metal
1. Sheet metal is to be a minimum of 24-gauge Bonderized steel.
2. Prime all surfaces of sheet metal that come in contact with roofing mastics, adhesives and coatings.
3. Solder all joints.
4. Corner flanges must be full corners.
5. Provide metal clips one gauge heavier than coping, gravel stop or edge metal.
6. Face of counter flashing and gravel stop or edge metal should be sufficient dimension to cover top of flashing or wood blocking.
7. Add sheet metal “skirt” around mechanical curbs and other flashing details, as required by the project.

I. Slopes over 3” in 12” (250mm/m):
1. On slopes over 3” in 12” (250mm/m), install interplies parallel to slope.

J. Scuppers/Outlets:
1. Set galvanized metal scuppers with lead flange in 1/8” troweling of Flashing Cement.
2. Three course lead flange with Flashing Cement and #183 Yellow Resin Coated Glass Fabric.
3. Prime flange with 910 Asphalt Roof Primer.
4. Seal flange with HE600 Ruftac and 1 layer of polyester with PG 197 Asphalt Emulsion at a rate of 4 gallons/100 ft².

K. Three (3) – Coursing
1. Prime wall surface at least 3" above termination edge of the base flashing.
2. Over completed base flashing trowel a 5-inch-wide layer of Flashing Cement 1/8” thick to completely cover nails and top edge of base flashing.
3. For inside and outside corners:
   a. Embed a 4" wide strip of #183 Yellow Resin Coated Glass Fabric and apply another 1/8" troweling of Flashing Cement covering fabric completely. Bring to a feather edge and finish in a straight line.
4. If not covered by metal counterflashing cover with Monolithic Emulsion system.

L. Valleys and Waterways:
1. Install extra layer of the specified glass base set in full width application of #902 Permanent Bond Adhesive in valleys, drains and waterways.

M. Crickets
1. Install crickets on skylight, AC units and mechanical curbs.
2. Per project requirements.

N. Water Cut-off:
1. At end of day’s work, or when precipitation is imminent, install a water cut-off at all open edges.
2. Install alternating layers of plastic cement and roof felts.
3. Construction is to withstand protracted periods of service.
4. Remove cut-offs completely prior to the resumption of roofing.

O. Coping Metal:
1. Remove, protect, and reinstall coping metal. Any coping metal damaged by the contractor needs to be replaced.

3.10. **INSTALLATION – METAL EDGING**

A. Extend the top layer of base sheet over edge of roof approximately 2".

B. Around the edge install treated wood nailer.

C. Install metal flange over completed membrane but before application of surfacing. Set metal flange in trowel application of Flashing Cement. Nail 3” O.C. staggered. Install 3 pan screws in every metal lap and seal with Three Courses of 183 Yellow Fabric and 167 Extreme Rubberized Flashing Cement.

D. Over prepared surface, prime with 910 Asphalt Primer and install 12-inch wide 600 Ruf-Tac over metal flange and extend onto the field of the roof.

E. Seal gaps between the Ruf-Tac and metal edging with 163 Emergency Leak Flashing Cement and broadcast granules. (Allow it to dry for 24 hours.)

3.11. INSTALLATION – WALL FLASHINGS

A. Wall Flashings
   1. Wood Walls. Install 1-ply of 604 Base Sheet with 902 Adhesive. Over the base sheet, install 1-ply of 606 Mineral Surfaced Cap Sheet granule side out. Fasten with Simplex nails every 12 inches on top of the flashing in all directions. Secure flashing assembly with scattered nail pattern with EG nails.
   2. Concrete and Masonry Walls. Install 1 layer of polyester fabric with PG 197 Asphalt Emulsion at a rate of 4 gallons per 100 ft^2.

3.12. SITE QUALITY CONTROL

A. Site Tests and Inspections
   1. Observe roofing installation during the following phases:
      a. Substrate verification
      b. Roofing installation start
      c. Final inspection of restoration, maintenance or roofing work completed.

B. Limit traffic on newly restored/maintained or roofed surfaces for a minimum of two (2) days. Damage to surface by other trades shall not be the responsibility of the installing Subcontractor.

C. Final Observation and Verification:
   1. Final inspection of roof coating membrane assembly shall be carried out by the Owner's representative, the installing Subcontractor, or Roofing Manufacturer as required by warranty.
   2. Gold Seal Warranty requires Manufacturer final observation and verification for warranty issuance.
      a. Contact Roofing Manufacturer for warranty issuance requirements.

3.13. CLEANING

A. Promptly as the Work proceeds, and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.

B. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.

C. Site Cleanup
   1. Test all drains to confirm they are free flowing and clear of debris.
   2. Clean gutters and downspouts as needed of all debris.
   3. Any deficiencies found during final inspection will be corrected within 5 working days and will be re-inspected by a Manufacturer's Representative and Owner's Representative.
   4. Leave premises clean to complete satisfaction of the Owner.

D. Waste Management
   1. As the Work proceeds, and upon completion, promptly clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.
   2. Clean soiled surfaces, spatters, and damage caused by Work of this Section.
   3. Dispose of roof coating per local code ordinances.

3.14. PROTECTION

A. Protect roof coating from damage by other trades.

B. Limit traffic on roof coated surfaces for a minimum of 2 days.

3.15. **MAINTENANCE**

A. Operations and Maintenance Review:

1. After completion and acceptance of project, manufacturer's representative to review in person or virtually via a video call with owner or owner's representative, the maintenance guidelines for the specified assembly.

END OF SECTION

1244 N ANAHEIM BLVD ANAHEIM, CA 92801-2504
Phone: (714) 449-2350
Fax: (714) 449-2355

6 UNIT CRICKETS ONLY, NOT TO EXCEED 3" - AS REQUESTED. [20psi PolyIso - Standard Facer (Type II, Class 1, Grade 2)]

Project Information

Project Name	PETERS CANYON ELEMENTARY SCHOOL	**Filing Number**	F26-04095
Owner Name		**Quote ID**	Q260205-87
Address		**Quote Date**	02/05/2026
City	Tustin	**Expires**	60 DAYS
State	CA	**Bid Date**	02/06/2026 02:00 PM
County		**Published By**	Brian Billingsley
Branch	Anaheim CA 132		brian.billingsley@QXO.com

Tapered Insul-Takeoff

Specifications

Manufacturer	HENRY A CARLISLE COMPANY
Insulation	20psi PolyIso - Standard Facer (Type II, Class 1, Grade 2)
Design	6 UNIT CRICKETS ONLY, NOT TO EXCEED 3" - AS REQUESTED.
Additional Information	Base Layer, Coverboard & Sumps are not included in this quote
Addenda	
Estimator	Brian Billingsley, (480) 229-6211, brian.billingsley@QXO.com

F26-04095-All Sections — $865.00

Area of Crickets	3.15 Sq	Total Applied	3.19 Sq
Minimum Thickness	0.50"	Total Handled	5.98 Sq
Maximum Thickness	2.50"		
Truckload Qty*	0.03		

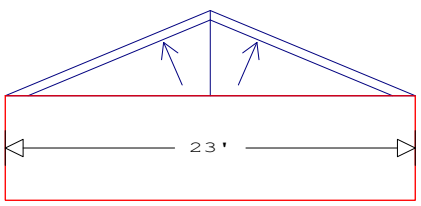
* Based on 44 (4x4) pallets per truckload

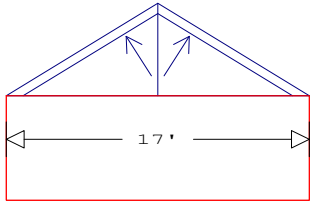
Products

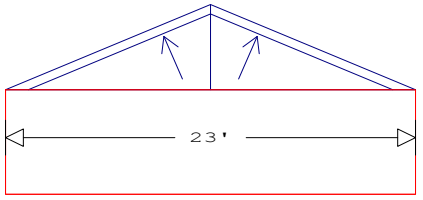
Type	Description	Slope/LF	Thickness
Cricket Tapered	0.5 X 4.0 TAPERED EDGE STRIP	1	
Cricket Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/2	

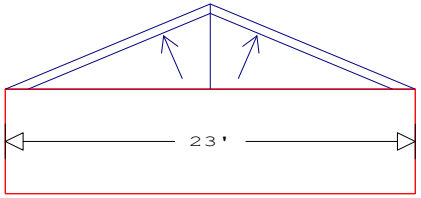
Notes

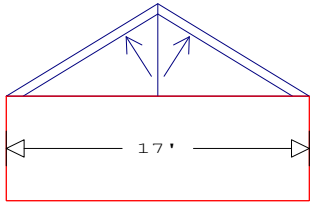
- 1) SQ BY AREA MUST BE VERIFIED BY CONTRACTOR BEFORE SHIPMENT.
- 2) QUOTE IS SUBJECT TO CONTRACTOR/ARCHITECT APPROVAL.
- 3) ADD SPECIFIED ISO BASE LAYER SEPARATELY AS REQUIRED.
- 4) ADD SPECIFIED OVERLAY SEPARATELY AS REQUIRED.
- 5) SUMP MATERIAL IS NOT INCLUDED IN QUOTE.
- 6) QUOTE DOES NOT INCLUDE TAPERED EDGE.

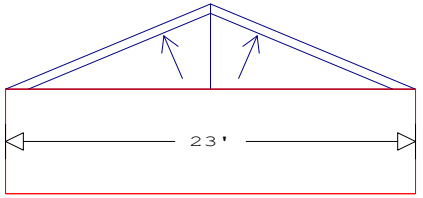












IMPORTANT NOTE- The dimension listed and areas shown on this Thumbnail represent our interpretation of the Tapered Insulation requirements for this project. It is the contractor's responsibility to verify that the actual project dimensions and areas identified are consistent with our interpretation. Please contact the Tapered Designer listed on this quote ASAP if any inconsistencies are discovered.

QXO ENGINEERING	Project: PETERS CANYON ELEM. SCHOOL	Job Number: F26-04095	2026/02/05 09:11

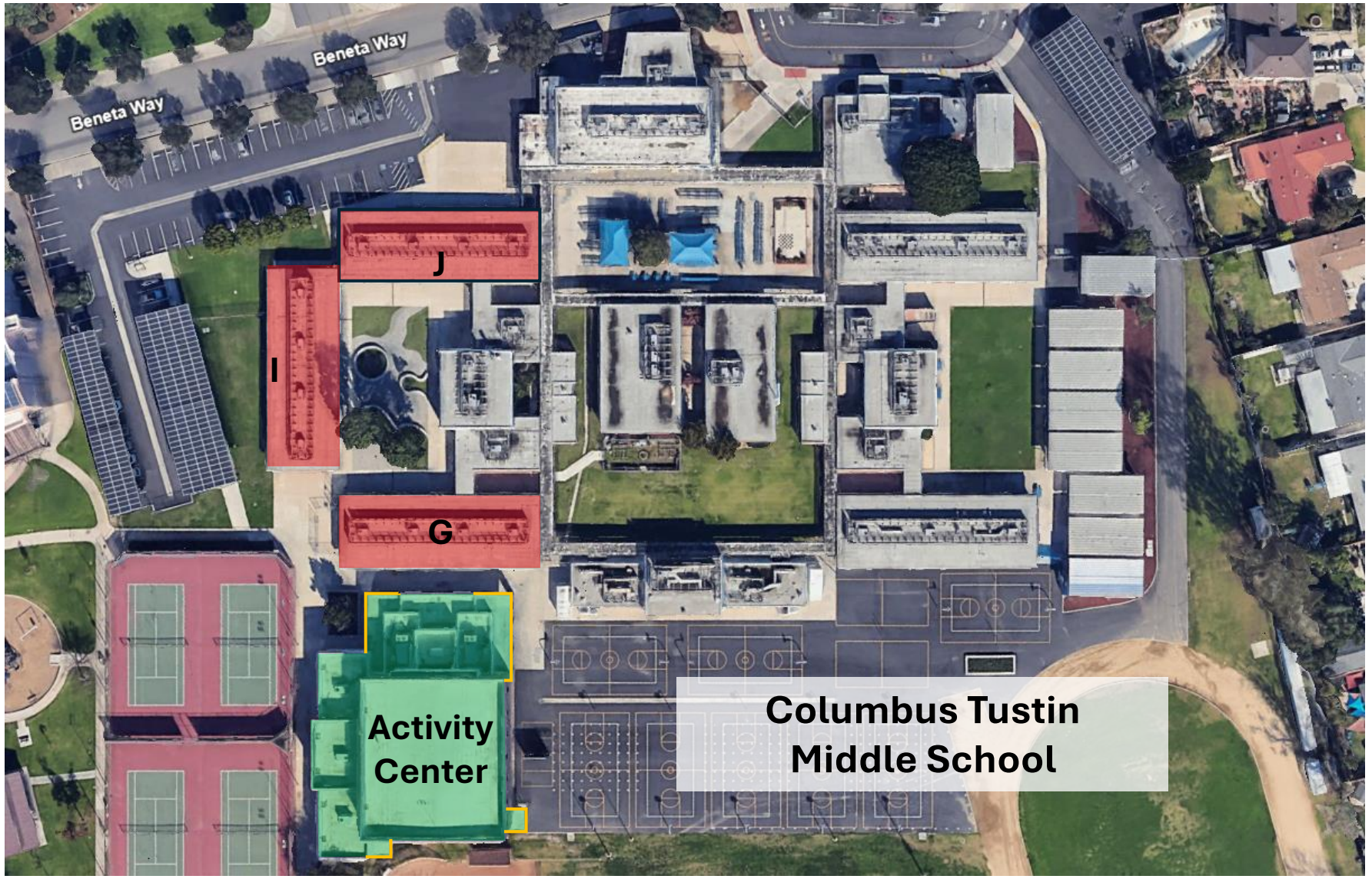
Quote Disclaimer/Notes

- Please be advised that pending tariffs could inordinately increase domestic costs on imported products and QXO can only honor a manufacturer's quote to the same extent that the manufacturer honors its quote to QXO.
- Where project pricing is based on full truckload quantities; warehouse orders cannot be sold at the full truck price.
- All quotes are subject to freight, material/fuel surcharges, hazmat fees, and deficit freight fees for partial truck shipments.
- Quantities and materials listed are based on our interpretation of the project, it is the customer’s responsibility to review all plans and specs for accuracy.
- Listed quantities are estimates only, QXO will not be responsible for overages or shortages on the quantities provided.
- Non-stock and special order material cannot be returned to a QXO facility.
- Please refer to the project quote # when placing an order for this project.



To purchase the product online,

visit TRI-BUILT 16" #14 Heavy Duty Roofing Fasteners



NAME OF SCHOOL:
Columbus Tustin Middle School

SCHOOL DISTRICT:
Tustin USD

ADDRESS:
17952 Beneta Way, Tustin, CA 92780

Complete Demo Buildings G, I, and J.
System: HR4-20-NMR-CR

Recover System Activity Center Building
System: H1-MR-CR 20

Remove and Reinstall New Edge Metal Activity Center Building.

GUIDE: RE-ROOF SPECIFICATIONS

Juventino Arcos
Tustin Unified School District
Maintenance & Operations
1302 Service Rd.
Tustin, CA 92780

Project Site: Columbus Tustin Middle School
Buildings G, I, J, and Activity Center

PROJECT SITES: Columbus Tustin Middle School

SECTION 07 52 00
COLD PROCESS MONOLITHIC BUILT-UP ROOFING

NAME OF SCHOOL: Columbus Tustin Middle School.
SCHOOL DISTRICT: Tustin USD.
ADDRESS: 17952 Beneta Way, Tustin, CA 92780
BUILDING: G, I, J, and Activity Center.

PART 1 - GENERAL

1.01. **GENERAL REQUIREMENTS**

A. The General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 01-General Requirements shall be read in conjunction with and govern this section.

B. The Specification shall be thoroughly comprehended by all parties concerned. Each Section may contain the work of any trade. The Contractor is solely responsible to make clear to the installing Subcontractor the extent of their Work.

1.02. **SUMMARY**

A. This Section includes requirements for supplying labor, materials, tools, and equipment to complete the Work as shown on the Drawings Architectural Division as specified herein including, but not limited to, the following:
1. Insulation
2. Insulation Adhesive or Mechanical Fasteners
3. Coverboard
4. Bonding Adhesive
5. Base/Interply(s)
6. Base Flashing
7. Chopped Glass Asphalt Emulsion
8. Base Coat
9. Primary Roof Coating
10. Walkways (AC Unit Service)
11. Granules

B. Scope of Work:

1. **Henry Specification #HR4-20-IMR-CR – Insulated Three-ply Reinforced Emulsion Roofing System w/ Reflective Acrylic Topcoat Assembly**

Over a prepared deck surface, mechanically fasten polyisocyanurate insulation layer(s) to the substrate. Install Coverboard Structodek HD with Primed Red Coating to polyisocyanurate insulation using mechanical fasteners. Install one (1) layer of #604 25# Fiberglass Base Sheet adhered to 902 Permanent Bond Adhesive as an underlayment. For interplay, install three plies of Henry 604 25# Fiberglass Base Sheet adhered with Henry 902 Permanent Bond Adhesive. Install Base Flashing with Henry 180 ModifiedPlus NP180gM4 adhered with 902 Permanent Bond Adhesive in transitions. Surface with Pro-Grade 197 Asphalt Emulsion reinforced with Henry 189 Fiberglass Roving. Finish with Pro-Grade 294 Premium Elastomeric Base Coat, White Armor Highly Reflective Granules, and Pro-Grade 280 Elastomeric White Roof Coating or other colors as specified. **Minimum dry film thickness (DFT) of 92 Mils.**

Specification System & Weights per 100 Sq. ft.	**Dry Weights**
Carlisle SecurShield or Hunter Polyisocyanurate Insulation	TBD.
Approved Mechanical Fasteners	TBD.
Coverboard (STRUCTODEK HD with Primed Red Coating)	TBD.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.

Henry 604 25# Fiberglass Base Sheet	25 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Henry 902 Permanent Bond Adhesive – 2 gallons per 100 sq. ft.	11 lbs.
Henry 604 25# Fiberglass Base Sheet	25 lbs.
Pro-Grade 197 Emulsion – 9 gallons per 100 sq. ft.	36 lbs.
Henry 189 Fiberglass Roving – 3 lbs. Per 100 sq. ft.	3 lbs.
Pro-Grade 294 Premium Elastomeric Base Coat – 2 gallons per 100 sq. ft	10 lbs.
Pro-Grade 280 Elastomeric White Roof Coating – 1 1/2 gallons per 100 sq. ft	8 lbs.
White Armor Highly Reflective Granules	20 lbs.
Pro-Grade 280 Elastomeric White Roof Coating – 2 gallons per 100 sq. ft	10 lbs.

Approximate Total Dry Weight: Insulation + Coverboard + 216 – 236 lbs. (2.16 – 2.36 lbs./SF)
Warranty: 20 Years

1.03. **DEFINITIONS**

A. Insulation:
   1. Carlisle SecurShield or Hunter Polyisocyanurate Insulation (R-Value as specified on building plans).
B. Insulation Adhesive:
   1. Approved mechanical fasteners.
C. Coverboard
   1. Blue Ridge Structodek HD with Primed Red Coating Coverboard to meet fire code requirements.
D. Interply Adhesive:
   1. Interply adhesive (Henry 902 Permanent Bond Adhesive) – 2 gallons per 100 ft^2/ply.
E. Underlayment:
F. One (1) layer of Henry 604 25# Fiberglass Base Sheet over Coverboard.
G. Interply:
H. Three (3) layers of Henry 604 25# Fiberglass Base Sheet over Insulation or Underlayment.
I. Base Flashing:
   1. NP180gM4 adhered with Henry 902 Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2/ply.
J. Surfacing
   1. Asphalt Emulsion
      a. Henry Pro-Grade 197 Reinforced Asphalt Emulsion with chopped glass:
         1) Cover prepared surfaces with undiluted PG 197 Asphalt Emulsion impregnated with 189 Fiberglass Roving over prepared surface.
   2. Basecoat
      a. Henry Pro-Grade 294 Elastomeric Base Coat and Sealant.
         1) Cover cured and cleaned PG 197 Asphalt Emulsion Surface in one coat.
   3. Granules
      a. White Armor Highly Reflective Granules.
         1) Broadcast granules in PG 280 top coat, first layer of coat.
   4. Topcoat(s):
      a. Henry Pro-Grade 280 Elastomeric White Roof Coating
         1) Cover PG 294 Elastomeric Base Coat and Sealant Surface (including broadcasted granules if chosen as an option) in a **minimum** of one coat

1.04. **REFERENCE STANDARDS**

A. American Society for Testing and Materials (ASTM):
   1. ASTM C-920 - Standard Specification for Elastomeric Joint Sealants

2. ASTM C-1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM D-471 – Standard Test Method for Rubber Property – Effect of Liquids
4. ASTM D-624 – Standard Test Method used to determine Tear Strength of Vulcanized Rubber and Thermoplastic Elastomers.
5. ASTM D-1117 - Standard Guide for Evaluating Nonwoven Fabrics
6. ASTM D-1227 – Standard Specification for Emulsified Asphalt Used as Protective Coating for Roofing.
7. ASTM D-1475 - Standard Test Method for Density of Liquid Coatings, Inks, and Related Products.
8. ASTM D-1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics
9. ASTM D-1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics
10. ASTM D-1628 - Standard Test Methods for Chemical Analysis of Chromated Copper Arsenate
11. ASTM D-1682 –Standard test methods for breaking the load and elongation of textile fabrics.
12. ASTM D-1688 - Standard Test Methods for Copper in Water
13. ASTM D-2196 - Standard Test Method for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer.
14. ASTM D-2263 - Methods of Testing Automotive Fabrics
15. ASTM D-2370 – Standard Test Method for Tensile Properties of Organic Coatings.
16. ASTM D-2697 – Standard Test Method that provides a Measure of the Volume of Dry Coating obtainable from a Given Volume of Liquid Coating.
17. ASTM D-2939 - Standard Test Methods for Emulsified Bitumens Used as Protective Coatings.
18. ASTM D-3019 – Standard Specification for Lap Cement used with Asphalt Roll Roofing, Non-Fibered and Fibered.
19. ASTM D-3409 – Standard Test Method for Adhesion of Asphalt-Roof Cement to Damp, Wet, or Underwater Surfaces
20. ASTM D-3786/D3786M Standard Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method
21. ASTM D-4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free
22. ASTM D-6083 – Standard Specification for Liquid Applied Acrylic Coating Used in Roofing.
23. ASTM E-96 - Standard Test Methods for Water Vapor Transmission of Materials
24. ASTM E-108 - Standard Test Methods for Fire Tests of Roof Coverings.
25. ASTM E-1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
26. ASTM G-21 – Standard Test Method to determine the Resistance of Synthetic Polymer and Plastic Materials to Fungal Growth.
27. ASTM C-208 – Standard Specification for Cellulose Fiber Insulated Board Types (Cant Strip), Grades and Sizes.
28. ASTM D-41/D-41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
29. ASTM D-93 - Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.
30. ASTM D-1777 - Standard Test Method for Thickness of Textile Materials.
31. ASTM D-3019 – Standard Specification for Lap Cement used with Asphalt Roll Roofing, Non-Fibered and Fibered.
32. ASTM D-3909 – Standard Specification for Asphalt Roll Roofing (Glass Felt) Surfaced with Mineral Granules.
33. ASTM D-3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
34. ASTM D4479/4479M - Standard Specification for Asphalt Roof Coatings—Asbestos-Free
35. ASTM D-4601/D4601M - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing; 2004 (Reapproved 2020).
36. ASTM D-5147/D-5147M - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.

37. ASTM D-5635-04a - Standard Test Method for Dynamic Puncture Resistance of Roofing Membrane Specimens.
38. ASTM D-6164/D-6164M - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements

B. California Building Code

C. California Energy Commission (CEC)
1. Title 24 Section 118(i)3

D. Cool Roof Rating Council

E. Environmental Protection Agency (EPA)
1. EPA Method 24

F. International Building Code Standard:
1. IBC Chapter 15: Roof Assemblies and Roof Top Structures.

G. National Roofing Contractors Association
1. NRCA Roofing Manual

H. OSHA: Occupational Safety and Health Administration - Washington, DC

J. SCAQMD – South Coast Air Quality Management
1. VOC Standards

K. SMACNA Contractors – Quality Work & Professional Services

L. Underwriters Laboratories (UL):
1. UL 790 – Standard Test Methods for Fire Tests of Roof Coverings

M. USGBC: US Green Building Council
1. Leadership in Energy and Environmental Design; LEED Reference Guide, Version 4.0
2. USGBC Project Calculation Spreadsheet; www.usgbc.org

1.05. ADMINISTRATIVE REQUIREMENTS

A. Coordination
1. Do not allow access to installation areas by other trades during roof installation.

B. Pre-bid Meeting
1. Manufacturer's representatives interested in submitting a bid are required to attend a pre-bid conference ten (10) days prior to bid opening.
2. Substitution limitations
   a. Submit a Roof Manufacturer certification letter during the pre-bid meeting, signed by the manufacturer, stating alternative material is equivalent to the specified product.
   b. Submit independent laboratory testing information verifying physical properties meet the specified performance criteria.
   c. Products accepted as equal to the specified product will be considered an alternate and presented as a bid addendum 5 days prior to bid opening.
   d. No changes or substitutions to the specified product will be accepted after bid opening.

C. Pre-installation Conference: Before starting roof deck construction, conduct conference at Project site.
1. Owner's Rep or Construction Manager to provide seven (7) days advance written notice ensuring attendance of the following key personnel:
   a. Owner, Architect, testing and inspecting agency representative, approved roofing installer's superintendent or foreman that is knowledgeable about specified system,

roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Discussion Topics:
   a. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
   b. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   c. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
   d. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
   e. Review governing regulations and requirements for insurance and certificates if applicable.
   f. Review temporary protection requirements for the roofing system during and after installation.
   g. Review roof observation and repair procedures after roofing installation.
   h. Review installation and coordination requirements for warranty eligibility prior to pre-applied roof installation.
   i. Review contract to ensure the full scope of work is covered.
3. Deliverables
   a. Via email, Owner’s Rep or Construction Manager to provide detailed notes from the Pre-installation conference and a copy of the project specification to all participants in attendance.
4. Prior to the start of installation, notify Manufacturer’s inspector forty-eight (48) hours prior to job start, schedule changes and prior to application of surfacing and reflective coat.

1.06. **SUBMITTALS**

A. Provide submittals in accordance with Section 01 33 00 Submittal Procedures.

B. Listed Manufacturer’s Submittals
1. Action Submittals
   a. Product data
      1) Guide specification
      2) Safety data sheets
      3) Standard details
      4) Installation Instructions
      5) Technical data sheets
      6) Health Declaration Product Certificates (HPD)
   c. Shop Drawings: For Manufacturer’s roofing system. Include roof plans, sections, details, and attachments to other work Certificates
   d. Material List of all items to be furnished and installed under this section.
   e. Fire Hazard Classification - Provide a letter certifying that roof membrane assembly qualifies for UL Class A fire hazard classification for the type of substrate(s), slope(s), insulation(s) (when applicable) and membrane(s) specified for this installation. Include a copy of the UL listing.
2. Informational Submittals
   a. Certification stating assembly components are supplied and warranted by single source Manufacturer:
      1) Certification stating the Roofing Manufacturer meets the following standards:
         a) Part of a single source manufacturer for Emulsions, Mastics, Roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.
         b) Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.
         c) Each manufacturing facility must implement a full-time quality control and oversight operating system.

d) Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.
e) Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.

2) Sarbanes-Oxley Act (SOX) compliant with public access to the published annual report.
3) Statement stating Installer is authorized by the Roofing Manufacturer to complete Work as specified.

b. Applicator Approval:
1) Provide letter from manufacturer of roofing materials stating that applicator is acceptable to manufacturer.

c. Sample Warranty(s):
1) Provide copies of all applicable manufacturer's warranties

3. Closeout Submittals
a. A daily work log from the contractor is to be provided to the Manufacturer.
b. Maintenance Data: For roofing system to include in maintenance manuals.
c. Final Warranty

C. Submittal of potential equal manufacturers not listed in specification:
1. Submittals shall be made not less than ten (10) days prior to bid date. Primary roof systems that have been reviewed and accepted as equals to the specified roof system will be listed in an addendum prior to bid date; only then will equals be accepted at bidding. All submittals which do not conform to the following requirements will be rejected.
2. Furnish in triplicate:
a. 8" x 10" mockup samples of the complete roof membrane and flashing membrane assemblies.
b. Latest edition of the roofing system manufacturer's specifications and installation instructions.
c. Detailed descriptive list of the materials proposed for use.
d. Copy of UL approval of the proposed roofing system for the required assembly and slope. No other testing agency approvals will be accepted.
e. Letter from the proposed primary roofing manufacturer confirming the number of years it has directly manufactured the proposed primary roofing system under the trade name and/or trademarks as proposed.
f. Complete list of material physical properties including solids. The owner reserves the right to request documentation from a nationally recognized independent lab certifying physical properties.
g. Copy of manufacturer's inspection form.
h. Qualifications of manufacturer's inspector(s)
i. Proposal from manufacturer for site specific quality control program.
j. Sample copy of the specified guarantee including terms and procedures for renewal.
k. Documentation that the manufacturer meets requirements of 1.07A.

1.07. QUALITY ASSURANCE

A. Manufacturer Qualifications
1. Manufacturer must not issue warranties for terms longer than they have been manufacturing and supplying specified products for a similar scope of Work.
2. Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.
3. Part of a single source manufacturer for roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.
4. Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.
5. The Manufacturer must furnish as a single source all primary roofing materials with manufacturer's labels and have current listing in Underwriters Laboratory Directory. Materials must bear UL Classification marking on bundle, package or container indicating that materials have been produced under UL's Classification and Follow-up Service.

6. Each manufacturing facility must implement a full-time quality control and oversight operating system.
7. Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.
8. Sarbanes-Oxley Act (SOX) compliant with public access to published annual report.
9. The manufacturer shall employ a field inspector available for periodic inspections throughout construction and final inspections. Inspection reports are to be available to the Owner Representative on request.
10. The Manufacturer shall be a member in good standing with the Southern California Roofing Contractors Association, National Roofing Contractors Association, Construction Specifications Institute, and California Association of School Business Officials.

B. Contractor Qualifications
1. Authorized by Roofing Manufacturer to complete Work as specified.
2. 5 year minimum experience in Work as described in this section.
3. The Contractor must provide a list of ten (10) projects of equal size and difficulty per the specified roof system type.
4. The Contractor must provide a supervisor that can communicate with the Manufacturer's Inspector and Owner Representative.
5. Contractor must provide knowledgeable foreman who understands all aspects of the specification.
6. Contractor must provide
   a. California Contractors License (California Projects Only)

1.08. **DELIVERY, STORAGE, AND HANDLING**

A. Delivery Requirements
1. Deliver material in manufacturer's original sealed and labeled containers and in quantities required allowing continuity of application.

B. Storage Requirements
1. Store materials as recommended by the Roofing Manufacturer and conforming to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, MSDS sheets, Product Data sheets, product labels, and specific instructions for personal protection.
2. Do not heat or store material containers at temperatures greater than 120ºF (49ºC).
3. Store materials out of direct exposure to the elements.
4. Product should be stored in closed containers.
5. Solvents:
   a. Keep solvents away from open flame or excessive heat.
6. Roll Goods
   a. Store roll goods on a clean flat surface.
   b. When ambient temperatures are below 40°F (4°C), rolled materials must be stored in protected or heated areas and brought to the roof as needed for application.
7. Asphalt Adhesives:
   a. Store asphalt adhesives and cement in a heated area prior to use in cold weather.

C. Handling Requirements
1. Handle material in such a manner as to preclude damage and contamination with moisture or foreign matters
2. Materials that are found to be damaged or stored in any manner, other than as stated above, shall be automatically rejected and shall be removed and replaced at the contractor's expense.
3. Provide adequate ventilation for protection from hazardous fumes.
4. Refer to the Roof Manufacturer's published literature.

1.09. **SITE CONDITIONS**

A. Protection/Safety Requirements:
1. Do not overload the structure with building materials

2. It is the responsibility of the installing Subcontractor to protect all surfaces not included in scope of Work from overspray including, but not limited to, windows, doors, adjacent areas, and vehicles.
    a. Installing Subcontractor to post signs noting potential overspray hazard within 400ft (122 M) of applications.
3. The applicator will be held responsible for any damage caused to roof top equipment, roof penetrations, clogged drains (if not identified prior to starting the work) and damage to the building and grounds resulting from the execution of his work.
    a. All air intake ventilation equipment shall be turned off to prevent fumes from entering the building.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.
6. Lock valves on tankers when not attended.
7. Cover or arrange air intakes to be turned off during the application of solvent based materials.
8. No smoking signs must be posted as mandated by local fire ordinances.

B. Environmental Requirements.
1. Do not perform Work over saturated insulation or saturated substrates.
2. Ensure all preparation Work is completed prior to installing roof.
3. All equipment shall be grounded during operations.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Never apply water-based emulsions when the ambient temperature is below 50°F (16°C) before the emulsion has cured to a tack-free black surface. Never apply within 6° of dewpoint. High humidity, fog and dew will greatly extend the time for emulsions to cure.
6. Before installing acrylic coatings, test the temperature of the roof with an infrared thermometer.
    a. If temperature exceeds (>140 °F / 60 °C), consult a Henry Technical Consultant regarding alternate installation requirements for acrylic coating.
        1) Do not install as specified in 3.08 – Surfacing Acrylic Coating.
7. Do not apply material during precipitation or when rain is expected during or after application, until the material is fully set.
    a. Follow Roofing Manufacturer's installation protocol.
8. Never apply solvent-based adhesives or coatings to a wet surface.
9. Do not perform Work on surfaces that are wet.

1.10. WARRANTY

A. Manufacturer Warranty: Twenty (20) Years from date of purchase
1. Gold Seal Warranty:
    a. Warrants system and installation; provides material and labor costs for repair for a period of twenty (20) years from the date of installation completion as a result of any of the following:
    b. Manufacturing product defect
    c. Faulty Installer's workmanship

PART 2 - PRODUCTS

2.01. ASSEMBLY MANUFACTURER

A. Henry® a Carlisle Company
336 Cold Stream Rd.
Kimberton, PA 19442
(800) 486-1278
www.henry.com

2.02. PERFORMANCE CRITERIA

A. Energy Performance:
1. Elastomeric White Roof Coating (ASTM D-6083)
    a. Initial solar reflectance, initial (ASTM C1549): 0.88

b. Solar reflective index (SRI): 111
c. Thermal emittance, initial (ASTM C-1549): 0.90
d. Meets California Energy Commission – Title 24, Sec. 118

B. Tested fire response characteristics (ASTM E 108 or UL 790): Class A

2.03. **PRODUCT DELIVERY**

A. Bulk delivery material shall be accompanied by a Henry Company bill of lading.

2.04. **MATERIALS**

A. General: Refer to Project Scope of Work for applicable product references.
B. Insulation: Meeting the following requirements
1. Carlisle SecurShield or Hunter Polyisocyanurate Insulation (R-Value as specified on building plans) ASTM C-1289-95
a. Density - ASTM D1622 – nominal 2 pcf
b. Compressive strength - ASTM D1621 – nominal 20 psi
c. Polyisocyanurate insulation overlay of fiberboard or ½" Hunter H-Sheild HD
d. Mechanical fasteners – corrosion resistant – listed with Factory Mutual
C. Insulation and/or Coverboard adhesive: Flexible FAST Insulation Adhesive as required for wind uplift conditions.
1. Dens Deck Prime, Gypsum Board, or STRUCTODEK HD with Primed Red Coating Coverboard to meet fire code requirements
D. Underlayment: Meeting the following requirements
1. Henry 604 25# Fiberglass Base Sheet (ASTM D-4601)
a. Nominal 25# asphalt coated base sheet
b. Flash Point: 500º F
c. Tensile Strength: 65 lbs. MD – 55 lbs. CD
d. FM Approved
e. UL Certified as a component within Class "A" and "B" Fire Rated Roof Coverings.
E. Interply: Meeting the following requirements
1. Henry 604 25# Fiberglass Base Sheet (ASTM D-4601)
a. Nominal 25# asphalt coated base sheet
b. Flash Point: 500º F
c. Tensile Strength: 65 lbs. MD – 55 lbs. CD
d. FM Approved
e. UL Certified as a component within Class "A" and "B" Fire Rated Roof Coverings.
F. Interply Adhesive: Meeting the following requirements
1. Henry 902 Permanent Bond Adhesive – low odor, modified and rubberized cold adhesive (ASTM D-3019):
a. Color/Appearance: Black Liquid
b. Asphalt by weight: 52% (ASTM D-4479)
c. Solids by weight: 75%±.2% minimum (ASTM D-4479)
d. Flash Point: 105°F minimum (ASTM D-93)
e. Lap Peel Strength: 48.9 lbf/in. min. (ASTM D-3019)
f. Max. VOC: 250 grams/liter (ASTM D-3960)
g. Max VOS: 2.08 lbs./gal
h. Specific Gravity @ 77º F (25ºC): 1.08
i. Weight Per Gallon: 9.0 – 9.2 lbs. (ASTM D-1475)
j. FM Approved
k. UL Certified as a component within Class "A" and "B" Fire Rated Roof Coverings.
G. Base Flashing: Meeting the following requirements
1. Henry Modified Plus NP180gM4
a. Tensile Strength - MD 100 lbf/in. - CD 80 lbf/in.
b. Elongation @ 0°F (-18°C) -MD 40% - CD 40%
c. Tear Resistance - MD 100 lbf/in. - CD 70 lbf/in.
d. Thickness 140 Mils ± 10%
e. FM Approved

f. UL Certified as a component within Class “A” and “B” Fire Rated Roof Coverings.

H. Asphalt Emulsion - Meeting following requirements:
1. Pro-Grade 197 Asphalt Emulsion
a. ASTM D-1227 Type III, Class I
b. Color. Black
c. Solids Content by Volume 49-53% (ASTM D-2697)
d. Viscosity @ 77°F 8000-15000 cps (ASTM D2196)
e. Density @ 77°F
f. Weight by Gallon 8.5-9.1 lbs./gal (ASTM D-1475)
g. Solids Content by Volume: 49-53% (ASTM D-2697)
h. FM Approved
i. Miami-Dade Certified
j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

I. Fiberglass Roving (Emulsion Reinforcement): Meeting the following requirements:
1. Henry 189 Fiberglass Roving:
a. Appearance: Ropelike strands
b. Color: White
c. Fiber Diameter: 6 microns (min)
d. Flashpoint: >212ºF
e. Maximum VOS: 0 lbs./gal
f. Maximum VOC: 0 g/l

J. Base Coast & Sealer- Meeting following requirements:
1. Pro-Grade 294 – Base Coat & Sealer
a. Appearance: Gray, fluid
b. Elongation: >250% (ASTM D-2370)
c. Solids Content by Volume: >48% (ASTM D-2697)
d. Tensile Strength, Initial: >150 psi (ASTM D-2370)
e. Viscosity (Brookfield): 21,000-28,000 cPs (ASTM-2196)
f. VOC Content (maximum): 50 g/l (APA Method 24)
g. Weight per Gallon: 10.5 – 11.4 lbs. (ASTM D-1475)
h. FM Approved
i. Florida Approved
j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

K. Elastomeric White Roof Coating - Meeting following requirements:
1. Pro-Grade 280 – Elastomeric White Roof Coating (ASTM D-6083)
a. Appearance: White
b. Elongation: >250% (ASTM D-2370)
c. Elongation, after 1000 Hours Aging: >230% (ASTM D-2370)
d. Tear Resistance: > 80 lbs./in. (ASTM D-624)
e. Tensile Strength, Initial: >240 psi (ASTM D-2370)
f. Flash Point: Non-Flammable
g. Fungi Resistance: Zero Rating (No Fungi) – (ASTM G-21)
h. Low Temperature Flexibility, after 1,000 Hours Aging: Pass (no Cracking or Checking) – (ASTM D-6083)
i. Solids Content by Volume: >52-56% (ASTM D-2697)
j. Viscosity (Brookfield): 35,000-48,000 cPs (ASTM-2196)
k. VOC Content (maximum): 50 g/l (EPA Method 24)
l. Water Swelling, Mass %: <20% (ASTM D-471)
m. Water Vapor Permeance: <50 perms (ASTM E96)
n. Weight per Gallon: 11.0 – 11.3 lbs. (ASTM D-1475)
o. Solar Reflectance, Initial: 0.88 (ASTM C-1549)
p. Solar Reflectance, 3 Yr.: 0.73 (ASTM C-1549)
q. Thermal Emittance, Initial: 0.90 (ASTM C-1549)
r. Thermal Emittance, 3Yr.: 0.87 (ASTM C-1549)
s. Solar Reflectance Index (SRI), Initial: 111 (ASTM E-1980)
t. Solar Reflectance Index (SRI), 3 Yr.: 89 (ASTM E-1980)
u. FM Approved
v. Florida Approved
w. Miami-Dade Certified

x. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering
y. California Energy Commission – Title 24, Sec. 118
z. Cool Roof Rating Council (CRRC) Rated
aa. LEED Credits

L. Miscellaneous Products & Accessories
1. Primers - Meeting the following requirements:
a. Henry 104Q QuikDry® - Asphalt Spray Primer:
1) Complies with ASTM D-41, and Federal Specification SS-A-701B.
2) Appearance: Black Liquid
3) Base: Air blown asphalt
4) Color: Black
5) Flash Point: 138ºF Maximum VOC: 550 g/l
6) Maximum VOS: 4.59 lbs./gal
7) Solids by Volume: 38.8%
8) Solids by Weight: 44.8%
9) Weight: 7.34 lbs./gal
b. #910 – Asphalt Primer:
1) Complies with ASTM D-41
2) Color: Black
3) Appearance: Black Liquid
4) Weight: 7.5-7.9 lbs./gal
5) Asphalt by Weight: 60-65%
6) Flash Point: >105ºF
7) Maximum VOS: 2.9 lbs./gal
8) Maximum VOC: 350 g/l
c. Prime-Tek Metal Primer & Rust Inhibitor (for coating applications)
1) Color/Appearance: White
2) Application Temperature: 50ºF to 110ºF
3) Solids by Weight: 45% +/- 2%
4) Solids by Volume: 37% +/- 2%
5) Maximum VOC: <100 g/l
6) Weight: 9.8 lbs./gal
2. Self-Adhered Base Sheet: Meeting the following requirements
a. #600 Ruftac – 75 mil - SBS modified self-adhesive membrane
1) Complies with ASTM D-1682
2) Color: Black
3) Appearance: Fabric with Adhesive Backing
4) Application Temperature: 50ºF and rising
5) Elongation: 85% MD
6) Flash Point: 430ºF
7) Maximum VOS: 0 lbs./gal
8) Maximum VOC: 0 g/l
3. Flashing Cement - Meeting the following requirements:
a. Pro-Grade 167 – Extreme Rubberized Flashing Cement:
1) Complies with ASTM D-4586 & ASTM D-3409
2) Appearance: Black Thick Paste
3) Application Temperature: -20ºF to 140ºF
4) Consistency: Trowel Grade
5) Flash Point: 105ºF
6) Underwater Adhesion: 100%
7) Maximum VOC: 275 g/l
8) Weight: 8.5-9.5 lbs./gal
9) Miami-Dade Certified
10) Can contribute to LEED certification credits
4. Joint Sealant - Meeting following requirements:
a. Henry 289 - White Roof Sealant
1) Complies with ASTM C-920, Class 25
2) Color: White

3) Appearance: Paste/mastic
4) Application Temperature: 50ºF and rising
5) Flash Point: > 212ºF
6) Maximum VOS: 0.42 lbs./gal
7) Maximum VOC: 50 g/l
8) Weight: 11.4-11.8 lbs./gal
9) Florida Approved
10) Miami-Dade Certified

5. Reinforcement Fabrics: Stitch bonded, high performance fabric reinforcement sheets - Meeting the following requirements:
   a. #195 Polyester Fabric:
      1) Color: White to Yellow White
      2) Weight: 3.0 oz./sq. yd.
      3) Elongation: 61-63% (ASTM D-1682)
      4) Mullen Burst: 176.8 lbs. (ASTM D-3786)
      5) Tensile Strength: 57.1 lbs. (ASTM D-1682)
      6) Trapezoidal Tear Strength: 16 lbs. (ASTM D-1117)
      7) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      8) Maximum VOS: 0 lbs./gal
   b. #196 Polyester Fabric:
      1) Color: White to Yellow White
      2) Weight. 2.9 oz./sq. yd.
      3) Elongation 25.8% (ASTM D-1682)
      4) Trapezoidal Tear Strength 14.2 lbs. (ASTM D-1117)
      5) Tensile 41 lbs. (ASTM D-1682)
      6) Mullen Burst 127 lbs. (ASTM D-3786)
      7) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      8) Maximum VOS: 0 lbs./gal
6. Repair Fabrics:
   a. Fiberglass - Meeting the following requirements:
      1) #183 Yellow Resin Coated Glass Fabric
         a) Complies with ASTM D-3019, Type III
         b) Appearance: Roll Mesh Fabric
         c) Color: Yellow
         d) Flash Point: > 212ºF
         e) Maximum VOC: 0 g/l
         f) Maximum VOS: 0 lbs./gal
         g) Mesh Size: 20 x 10 Thread Count
         h) Tensile Strength Film (Initial): 75 lbs./inch
7. White Armor Highly Reflective Granules (Optional)
   a. Color: White
   b. Bulk Density: 90-100 lbs./cu ft.
   c. UL 790 Class “A” Fire Rating
   d. FM Standard 4470 for Class 1 Fire, Windstorm & Hail Classification Approval
   e. CRRC Rated – Prod ID 0626-0005
   f. California Title 24 Compliant
   g. SPFA Accreditation
   h. ICC-ES
8. Walkways or Walkpads
   a. Built in place
   b. Prefabricated by Carlisle
9. Approved mechanical fasteners
10. Womanized/Pre-Treated wood nailer
11. Replacement metal to be 24-gauge Bonderized sheet metal.
   a. Metal edging to have a minimum ¼” rise.
   b. All flanges to be 4 inches with full corners.
   c. Pitch pans not accepted.
12. Lead Flashings for pipes to be minimum 4 oz. – factory or field soldered.
13. Lead sheets (30” x 30”) for drains

14. Josam, Smith, or Zurn drains and overflows
15. Cant strips ASTM C-208

PART 3 - EXECUTION

3.01. **GENERAL**

A. Professional knowledge and understanding of Henry Company's Product Data is part of this specification.
B. Tear off the existing roof system. (Building G, I, and J).
C. Remove screen walls and wood sleepers.
D. Do not tear off or remove any more roof than can be replaced the same day.
E. Provide the price per plywood sheet (material and labor) to the Owner's Representative.
F. Repair or replace damaged or rotted plywood on the wood deck. Before repairing wood damage, verify and obtain approval from the Owner's Representative (Tustin USD supervisor).
G. Install a taper system as per the design drawings, using mechanical fasteners with patterned screws: 12 in the field, 18 on the perimeter, and 24 at the corners.
H. Furnish and install a wood nailer around the perimeter of the building with a 6" minimum width.
I. Furnish and install a wood skirt around the AC units. (Note: Double cans are not acceptable)
J. Furnish and install skirt metal 24 GA, Galvanized around the AC units, roof hatch, and mechanical equipment.
K. Furnish and install a new edge metal, 24 GA, Bonderized with a continuous click.
L. Furnish and install lead flashing for pipe penetration and wall supports.
M. Furnish and install 30" x 30" lead sheets on drains.
N. Furnish and install Dura-Blok for conduits or pipes, install on top of the reflective coating. (Note: Dura-Blok painted or set in chopped glass or coating is not acceptable.)
O. Install cricket system on AC units and mechanical curbs.
P. Install two walking pads per AC unit.
Q. Test interior drains to confirm they flow freely. Immediately notify Owner's Representative if any corrections are necessary.
R. Protect drains from gravel plugs or debris.

3.02. **EXAMINATION**

A. Verification of Conditions
1. Verify substrates are in accordance with Roofing Manufacturer requirements and as specified in this Section prior to Double cans are not accepted. roof installation. Commencement of Work indicates installer acceptance of the substrate.
a. Verify that surfaces are sound, dry, clean, and free of oil, grease, dirt, excess mortar, frost, laitance, loose and flaking particles, or other contaminants.
b. Verify substrates are continuous and secured.
c. Verify metal flashings, wood blocking, skylights, scuppers, gutters, penetrations, and structures located within the area of Work are leak-free and in good working condition.
d. Verify insulation and roofing membrane are not damaged or previously saturated with water.

B. Preinstallation Testing
1. Moisture detection survey, as applicable
a. Visual inspection
b. Moisture analysis, choose from the following:
1) Infrared Thermography
2) Nuclear Scan
3) Electric Capacitance / Impedance Testing
4) Roof core cut samples

C. Evaluation and assessment
1. Verify roof areas promote positive drainage. Contact Roofing Manufacturer for ponding area repair procedures.
2. Report in writing any unsatisfactory conditions that cannot be warranted.

3.03. **PREPARATION**

A. Protection of In-Place Conditions
   1. Protect areas and surfaces not included in scope of Work against damage or soiling.
   2. Secure protective coverings against wind and vent area if used in conjunction with applications preventing collection and moisture.
   3. Post signs noting potential overspray hazard within four hundred (400) feet of applications.
   4. Turn off air-intake ventilation equipment to prevent fumes from entering the building.
   5. Post "No Smoking" signs near roof coating installation until vapors dissipate.

B. General Preparation:
   1. Tear off the existing roof system.
   2. Repair and/or re-nail roof sheathing where necessary.
   3. Cover gaps of ¼" or more between sheathing boards with flat sheet metal stock nailed.
   4. Double-canted curbs to be skirted around all sides of the platform with a minimum of 15/32" CDX plywood. Double-canted curbs are not accepted.
   5. Prefabricated metal curbs and cants to be sheathed or skirted with a minimum 15/32" CDX Plywood.
   6. Contractor to replace deteriorated sheathing with new to match existing unless specified otherwise under the Scope of Work.

3.04. **INSTALLATION: GENERAL REQUIREMENTS**

A. General
   1. Install roofing products in accordance with the roofing system manufacturer's details, application guide and scope of work for the site and the requirements as outlined below.

B. Valley and Waterways:
   1. Install an extra layer of the specified glass base set in a full-width application of # 902 permanent bond adhesive in valleys, drains, and waterways.

C. Primer:
   1. Prime metal or lead flanges (All jacks, edge metal), concrete and masonry surfaces with a uniform coating of #910 Penetrating Asphalt Primer

D. Adhesives, primer, emulsion, reflective coat, and sealants:
   1. Thinning or alterations are not permitted.

E. Drains:
   1. Clean all drains and remove clamp ring, dried mastic, and any other loose material. Prime with 910 Penetrating Asphalt Primer and aloe to dry, install a minimum 30" square lead in drains set in 167 Extreme Rubberized Flashing Cement.

F. Caulking
   1. Wire brush and prime.
   2. Replace with compatible Sealant or Flashing Cement.

G. Conduit and Pipe Supports:
   1. Lift all supports for conduits and other pipes.
   2. Install Dura-Blok for conduit or pipes on top of the reflective coating.
   3. Loosen brackets so pipes can expand and contract freely.

H. Roof Coatings:
   1. Storage and Handling
      a. Roof coating may settle during storage.
      b. Mix roof coating prior to use with drill and mixer blade until consistent viscosity is achieved.
   2. Roof Marking and Protection
      a. Measure and mark area prior to roof coating installation.
      b. Contact the Roofing Manufacturer for roof marking instructions.
         1) Coverage rates are theoretical and do not account for material loss due to spraying, surface texture, and waste.
         2) Install a test patch to verify coating achieves millage requirements.
         3) Adjust application rates based on test patch results to meet specified requirements.

I. Walkways:
   1. Install walkways in 4' sections, allowing 2" spacing between sheets.
   2. Cut and trim pieces as required to fit conditions.
   3. Set walkway in spot applications of PG 167 - All Weather Flashing Cement.

4. Install two walking pads per AC unit and roof access.

J. Walls:
1. Wood walls: 1 ply of 606 80# Granulated Cap Sheet with 902 Permanent Bond Adhesive at a rate of 2 gallons per square granules exposed. Apply one ply of 604 Fiberglass interply adhered with **902** Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2.
2. Concrete walls: Install one layer of 195 or 196 polyester fabric embedded in PG 197 Asphalt Emulsion at a rate of 4 gallons per 100 ft^2.
3. Contact a Henry Technical Representative to ensure you receive the right information for specifications or about specific applications.

K. Curbs
1. Apply one ply of 604 Fiberglass interply adhered with **902** Permanent Bond Adhesive at a rate of 2 gallons per 100 ft^2.
2. Install one ply of 606 80# Granulated Cap Sheet with 902 Permanent Bond Adhesive at a rate of 2 gallons per square granules exposed, fastened with scattered EG nails.
3. Double-canted curbs to be skirted around all sides of the platform with a minimum of 15/32" CDX plywood. Double-canted curbs are not accepted.
4. Prefabricated metal curbs and cants to be sheathed or skirted with minimum 15/32" CDX Plywood.
5. Contractor to replace deteriorated sheathing with new to match existing unless specified otherwise under Scope of Work.
6. Mechanical Metal Curbs:
   a. Prime surface with 910 Asphalt Primer.
   b. Install a layer of HE600 Ruf-Tac and 1 layer of polyester with PG 197 Asphalt Emulsion at a rate of 4 gallons/100 ft^2.

L. Equipment:
1. Roof coating pumps and spray guns - air-atomized or airless type.
   a. The pump must be able to deliver at least 800 to 1000 psi at the spray gun tip.
   b. The tip must be .100 size with 80º fan "ten eighty" tip.
   c. The hose diameter must be at least 3/4" I.D, with the last 50' being 1/2" I.D. For hose lengths longer than 450', 1" I.D. is recommended.

3.05. INSTALLATION: MEMBRANE APPLICATION – COLD PROCESS MONOLITHIC ROOFING

A. Application:
1. Details as specified for each particular roof system or project are to be followed as thay may vary. Prior to application, cut the rolls into lengths suitable for installation and lay flat to eliminate curl. Unless otherwise specified, the base ply is laid with 2" side laps and 4" end laps and nailed, spot-adhered or fully adhered with cold application cement or hot asphalt. Subsequently plies are completely adhered, cold or hot method.

B. Underlayment:
1. Install **#604** Fiberglass with **902** cold-applied cement at a rate of 2 gallons per 100 ft^2.

C. INTERPLY
1. TO COMPLETE 3-PLY ASSEMBLY: Over the base ply, apply three **#604** Fiberglass interply sheets set in a uniform application of **#902** cold-applied cement at a rate of 2 gallons per 100 ft^2. Apply the first sheet with an 18" width, then over that, a full-width piece. Install the remaining sheets full-width overlapping preceding sheet 19". On slopes over 3" in 12", install interplies parallel to slope.

D. Before the end of each day, roll the membrane with a weighted roller (75 lb. minimum). Provide water stops and seal all terminations.

E. Allow 7 days to dry and cure.

3.06. **INSTALLATION: BASE FLASHING**

A. Wood walls:
   1. Install ModifiedPlus NP180gM4 with 902 Adhesive at a rate of 2 gallons/100 ft^2. Extend 4" onto the roof deck. Secure top of flashing with Simplex nails every 12" OC.

B. Concrete, brick or block walls:
   1. Install ModifiedPlus NP180gMA with 902 Adhesive at a rate of 2 gallons/100 ft^2. Extend 4" onto the roof deck. Secure top of flashing with Simplex concrete nails every 12" OC.
   2. Prime wall surface at least 3" above termination edge of the base flashing as required for the project.
   3. Over completed base flashing trowel a 5-inch-wide layer of Flashing Cement 1/8" thick to completely cover nails and top edge of base flashing.

3.07. **INSTALLATION: SURFACING (MONOLITHIC SYSTEM)**

A. After 902 Adhesive has thoroughly cured (no solvent odor is evident and laps cannot be pulled apart), sweep or pressure blow dust and debris from the roof surface to provide a clean surface. Hose and/or scrub off with water any residue accumulation.

B. Protect adjacent walls not scheduled for emulsion and reflective coating. Protect equipment, roof top units, etc. from overspray.

C. Cover prepared surfaces with PG 197 Asphalt Emulsion at a rate of 9 gallons per 100 ft^2. to achieve 145 wet mils (79 dry mils). Evenly blend emulsion with ¾" Henry 189 Fiberglass Roving reinforcing at a rate of 3 lbs. per 100 ft^2 sprayed with equipment approved by Henry Company. Tufting of the glass fibers is not acceptable.

D. Spray emulsion in a pattern into laps of membrane so that when system is dry, there are no voids or bridging of glass over any seam of the membrane.

E. Spray base flashings and other designated surfaces with the Monolithic System.

F. Allow 7 - 10 days to dry and cure in hot, dry weather, and 10-14 days in cold weather. Contact a Henry Technical Representative with any questions.

3.08. **INSTALLATION: REFLECTIVE COATING**

A. Allow emulsion surfacing to cure. Clean the surface of dust, debris, and power-wash to remove oils and stains. Scrub out any pockets of residue.

B. Apply Pro-Grade 294 Base Coat at a rate of 2 gallons per 100 ft^2 per coat, allow to dry cure 100%.

C. Apply Pro-Grade 280 White Elastomeric Roof Coating at a rate of 1 1/2 gallons per 100 ft^2 per coat. Broadcast 20 lbs. of ceramic granules per 100 ft^2 into wet 280 Topcoat over the entire surface.

D. Apply Pro-Grade 280 White Elastomeric Roof Coating at a rate of 2 gallons per 100 ft^2 per coat.

E. When applying base and topcoat, allow to dry thoroughly for a minimum of 24 hours between coats.

F. Any areas that peel must be redone before the project is considered complete.

3.09. **INSTALLATION: DETAILING AND FLASHING**

A. Cant Strips:
   1. Install cant strip at all horizontals to vertical transitions.
   2. Nail or set in mastic. Set to provide a smooth transition without gaps.
   3. Miter corners.
   4. At scuppers, bevel cant strip starting 8" back from outlet.

B. Cool – Cold Weather Applications:
   1. Roll the membrane with a 75 lb. (34kg) (minimum) weighted roller within 30 minutes to 4 hours of application during temperatures of less than 58 degrees.
   2. Provide water stops and seal all terminations at the end of each day.
      a. Broom over all applied membranes at the end of the day.
   3. Provide water stops and seal all terminations at the end of each day.
      a. Broom over all applied membranes at the end of the day.

C. Coping Joints
   1. Clean coping joints.
   2. Prime 3 inches on both sides of joint and seal joint with 6-inch minimum layer of #600 Ruftac.

D. Drains:
   1. Clean all drains and remove clamp rings, dried mastic and any other loose material.
   2. Prime with 910 asphalt primer and allow to dry.
   3. Install minimum 30” square leads in drains set in Flashing Cement.
   4. Replace broken or missing clamp rings, bolts or fasteners and drain bonnets with new.
   5. Complete drains the same day.

E. Equipment Pads:
   1. Install one layer of #600 Ruftac over equipment pads before installing metal pans.

F. Metal flanges (all jacks, edge metal, etc.):
   1. Prime concrete and masonry surfaces with a uniform coating of asphalt primer.

G. Pipe Penetrations:
   1. Set lead flashing flange over base plies set in Flashing Cement.
   2. Seal with 2 plies of 604 Base Sheet with 902 Adhesive. First ply: 20” x 20”. Second ply: 36” x 36”.
   3. When specified in project’s Scope of Work, install storm collars on all pipe penetrations and jacks.
   4. Use Ruf-Tac 20” x 20” and a layer of 36” x 36” 195 or 196 polyester fabric with 197 Asphalt Emulsion at a rate of four (4) gallons per 100 ft² as an added layer when installing lead flanges over the 604 25# Base Sheet.

H. Sheet Metal
   1. Sheet metal is to be a minimum of 24-gauge Bonderized steel.
   2. Prime all surfaces of sheet metal that come in contact with roofing mastics, adhesives and coatings.
   3. Solder all joints.
   4. Corner flanges must be full corners.
   5. Provide metal clips one gauge heavier than coping, gravel stop or edge metal.
   6. Face of counter flashing and gravel stop or edge metal should be sufficient dimension to cover top of flashing or wood blocking.
   7. Add sheet metal “skirt” around mechanical curbs and other flashing details, as required by the project.

I. Slopes over 3” in 12” (250mm/m):
   1. On slopes over 3” in 12” (250mm/m), install interplies parallel to slope.

J. Scuppers/Outlets:
   1. Set galvanized metal scuppers with lead flange in 1/8” troweling of Flashing Cement.
   2. Three-course lead flange with 167 Flashing Cement and #183 Yellow Resin Coated Glass Fabric.
   3. Prime flange with 910 Asphalt Roof Primer.
   4. Seal flange with HE600 Ruf-Tac and 1 layer of polyester with PG 197 Asphalt Emulsion at a rate of 4 gallons/100 ft².

K. Three (3) – Coursing
   1. Prime wall surface at least 3" above termination edge of the base flashing.
   2. Over completed base flashing trowel a 5-inch-wide layer of Flashing Cement 1/8” thick to completely cover nails and top edge of base flashing.
   3. For inside and outside corners:
      a. Embed a 4" wide strip of #183 Yellow Resin Coated Glass Fabric and apply another 1/8" troweling of Flashing Cement covering fabric completely. Bring to a feather edge and finish in a straight line.
   4. If not covered by metal counterflashing, cover with Monolithic Emulsion system.

L. Valleys and Waterways:
1. Install an extra layer of the specified glass base set in a full-width application of #902 Permanent Bond Adhesive in valleys, drains, and waterways.

M. Taper System
1. Install the taper system in accordance with the design drawings, using mechanical fasteners with patterned screws: 12 in the field, 18 on the perimeter, and 24 at the corners.

N. Crickets
1. Install crickets on AC units and mechanical curbs.
2. Per project requirements.

O. Water Cut-off:
1. At end of day's work, or when precipitation is imminent, install a water cut-off at all open edges.
2. Install alternating layers of plastic cement and roof felts.
3. Construction is to withstand protracted periods of service.
4. Remove cut-offs completely prior to the resumption of roofing.

3.010. INSTALLATION – METAL EDGING

A. Extend the top layer of base sheet over edge of roof approximately 2".
B. Around the edge of the building, install a treated wood nailer.
C. Install new Bonderized edge metal with continuous click, with a minimum of 4" of flange and ¼ of rise.
D. Install metal flange over completed membrane, but before application of surfacing. Set the metal flange in the trowel application of Flashing Cement. Nail 3" O.C. staggered. Install 3 pan screws in every metal lap and seal with Three Courses of 183 Yellow Fabric and 167 Extreme Rubberized Flashing Cement.
E. Overprepared surface, prime with #910 Asphalt Primer and install 12-inch wide 600 Ruf-Tac over the metal flange and extend onto the field of the roof.
F. Seal gaps between the Ruf-Tac and metal edging with 163 Emergency Leak Flashing Cement and broadcast granules. (Allow it to dry for 24 hours.)

3.011. INSTALLATION – WALL FLASHINGS

A. Wall Flashings
1. Wood Walls. Install 1-ply of 604 Base Sheet with 902 Adhesive. Over the base sheet, install 1-ply of 606 Mineral Surfaced Cap Sheet granule side out. Fasten with Simplex nails every 12 inches on top of the flashing in all directions. Secure flashing assembly with scattered nail pattern with EG nails.
2. Concrete and Masonry Walls. Install 1 layer of polyester fabric with PG 197 Asphalt Emulsion at a rate of 4 gallons per 100 ft^2.

3.012. SITE QUALITY CONTROL

A. Site Tests and Inspections
1. Observe roofing installation during the following phases:
a. Substrate verification
b. Roofing installation start
c. Final inspection of restoration, maintenance or roofing work completed.

B. Limit traffic on newly restored/maintained or roofed surfaces for a minimum of two (2) days. Damage to surface by other trades shall not be the responsibility of the installing Subcontractor.

C. Final Observation and Verification:
1. Final inspection of roof membrane assembly shall be carried out by the Owner's representative, the installing Subcontractor, or Roofing Manufacturer as required by warranty.
2. Gold Seal Warranty requires Manufacturer final observation and verification for warranty issuance.

a. Contact Roofing Manufacturer for warranty issuance requirements.

3.013. **CLEANING**

A. Promptly as the Work proceeds, and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.

B. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.

C. Site Cleanup
1. Test all drains to confirm they are free flowing and clear of debris.
2. Clean gutters and downspouts as needed of all debris.
3. Any deficiencies found during final inspection will be corrected within 5 working days and will be re-inspected by a Manufacturer's Representative and Owner's Representative.
4. Leave premises clean to complete satisfaction of the Owner.

D. Waste Management
1. As the Work proceeds, and upon completion, promptly clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.
2. Clean soiled surfaces, spatters, and damage caused by Work of this Section.
3. Dispose of roof coating per local code ordinances.

3.014. **PROTECTION**

A. Protect roof coating from damage by other trades.

B. Limit traffic on roof coated surfaces for a minimum of 2 days.

3.015. **MAINTENANCE**

A. Operations and Maintenance Review:
1. After completion and acceptance of project, manufacturer's representative to review in person or virtually via a video call with owner or owner's representative, the maintenance guidelines for the specified assembly.

END OF SECTION

GUIDE: RE-ROOF SPECIFICATIONS

Juventino Arcos
Tustin Unified School District
Maintenance & Operations
1302 Service Rd.
Tustin, CA 92780

Project Site: Columbus Tustin Middle School -
Activity Center Building

PROJECT SITES: Columbus Tustin Middle School

SECTION 07 01 50
RESTORATION/MAINTENANCE OF MEMBRANE ROOFING SYSTEMS
20-YEAR 1 PLY REINFORCED

NAME OF SCHOOL: Columbus Tustin Middle School.
SCHOOL DISTRICT: Tustin USD.
ADDRESS: 17952 Beneta Way, Tustin, CA 92780
BUILDING: Activity Center.

PART 1 - GENERAL

1.01. **GENERAL REQUIREMENTS**

A. The General Conditions, Supplementary Conditions, Instructions to Bidders, and Division 01 - General Requirements shall be read in conjunction with and govern this section.

B. The Specification shall be thoroughly by all parties concerned. Each Section may contain work of any trade. The Contractor is solely responsible to make clear to the installing Subcontractor the extent of their Work.

1.02. **SUMMARY**

A. This Section includes requirements for supplying labor, materials, tools, and equipment to complete the Work as shown on the Drawings Architectural Division as specified herein including, but not limited to, the following:
   1. Sealant
   2. Foundation Coat
   3. Reinforcement
   4. Primary Roof Coating

B. Scope of Work:
   1. **Single-Ply Reinforced Roof Maintenance w/ Reinforced Emulsion and Reflective Acrylic Topcoat Assembly (#H1-MR-CR)**
      a. Over prepared existing roof, install one ply of either # 195 or #196 Polyester Sheet in one (1) layer of Pro-Grade 197 Asphalt Emulsion, at four (4) gallons per square [Sixty-four] (64) wet mils [Twenty-five (25) mils DFT]. Surface with Pro-Grade 197 Asphalt Emulsion, reinforced with #189 Chopped Fiberglass at nine (9) gallons per square [One Hundred Forty-four (144) wet mils; [Fifty-seven (57) mils DFT]. Finish with Pro-Grade 294 Basecoat & Sealer, White Armor Highly Reflective Granules (Optional) and Two Topcoats Pro-Grade 280 Elastomeric White Roof Coating.

Specification System & Weights per 100 Square Feet:	**Dry Weights**
Pro-Grade 197 Asphalt Emulsion – 4 gallons/100 sq. ft.	16 lbs.
Pro-Grade 195 or 196 Polyester Fabric	3 lbs.
Pro-Grade 197 Asphalt Emulsion – 9 gallons/100 sq. ft.	36 lbs.
HE 189 Chopped Fiberglass – 3 lbs. Per 100 sq. ft.	3 lbs.
Pro-Grade 294 Base Coat & Sealer – 2 Gallons per 100 sq. ft.	10 lbs.
Pro-Grade 280 White Elastomeric White Roof Coating – 1 1/2 gallons per 100 sq. ft.	10 lbs.
White Armor Highly Reflective Granules.	20 lbs.
Pro-Grade 280 White Elastomeric White Roof Coating – 2 gallons per 100 sq. ft.	8 lbs.

Approximate Total Dry Weight: **84 - 104 lbs. (0.84 – 1.04 lbs./square foot)**
Warranty: 20 Years

C. Related Requirements:
   1. Section 07 62 00 Sheet Metal Flashing and Trim
   2. Section 07 71 00 - Roof Specialties: Flashing collars

3. Section 07 71 00 - Roof Specialties: Counterflashing
4. Section 07 72 00 - Roof Specialties: Pipe Flashing
5. Section 22 1006 - Plumbing Piping Specialties: Roof

1.03. **DEFINITIONS**

A. Surfacing:
1. Asphalt Emulsion
a. Pro-Grade 197 Reinforced Asphalt Emulsion with chopped glass:
1) Cover prepared surfaces with undiluted Pro-Grade 197 Asphalt Emulsion impregnated with HE 189 Chopped Glass Roving over prepared surface.
2. Reinforcement
a. Embed HE 195 or 196 Polyester into Pro-Grade 197 Asphalt Emulsion
3. Basecoat
a. Pro-Grade 294 Elastomeric Base Coat and Sealant
1) Cover cured and cleaned Pro-Grade 197 Asphalt Emulsion Surface in one coat
4. Granules
a. White Armor Highly Reflective Granules
1) Broadcast granules in Pro-Grade 294
5. Topcoat:
a. Pro-Grade 280 Elastomeric White Roofing Coating
1) Cover Pro-Grade 294 Elastomeric Base Coat and Sealant Surface in a minimum of two coats

1.04. **REFERENCE STANDARDS**

A. American Society for Testing and Materials (ASTM):
1. ASTM C-920 - Standard Specification for Elastomeric Joint Sealants
2. ASTM C-1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer.
3. ASTM D-1227 – Standard Specification for Emulsified Asphalt Used as Protective Coating for Roofing.
4. ASTM D-1475 - Standard Test Method for Density of Liquid Coatings, Inks, and Related Products.
5. ASTM D-1628 - Standard Test Methods for Chemical Analysis of Chromated Copper Arsenate
6. ASTM D-1688 - Standard Test Methods for Copper in Water
7. ASTM D-2196 - Standard Test Method for Rheological Properties of Non-Newtonian Materials by Rotational Viscometer.
8. ASTM D-2263 - Methods of Testing Automotive Fabrics
9. ASTM D-2370 – Standard Test Method for Tensile Properties of Organic Coatings.
10. ASTM D-2697 – Standard Test Method that provides a Measure of the Volume of Dry Coating obtainable from a Given Volume of Liquid Coating.
11. ASTM D-2939 - Standard Test Methods for Emulsified Bitumens Used as Protective Coatings.
12. ASTM D-3019 – Standard Specification for Lap Cement used with Asphalt Roll Roofing, Non-Fibered and Fibered.
13. ASTM D-3409 – Standard Test Method for Adhesion of Asphalt-Roof Cement to Damp, Wet, or Underwater Surfaces
14. ASTM D-4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free
15. ASTM D-6083 – Standard Specification for Liquid Applied Acrylic Coating Used in Roofing.
16. ASTM E-96 - Standard Test Methods for Water Vapor Transmission of Materials
17. ASTM E-108 - Standard Test Methods for Fire Tests of Roof Coverings.
18. ASTM E-1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

19. ASTM G-21 – Standard Test Method to determine the Resistance of Synthetic Polymer and Plastic Materials to Fungal Growth.

B. Cool Roof Rating Council

C. Environmental Protection Agency (EPA)
1. EPA Method 24

D. National Roofing Contractors Association
1. NRCA Roofing Manual

E. OSHA: Occupational Safety and Health Administration - Washington, DC

G. SMACNA Contractors – Quality Work & Professional Services

H. Underwriters Laboratories (UL):
1. UL 790 – Standard Test Methods for Fire Tests of Roof Coverings

I. Uniform Building Code Standard:
1. UBC 32 4: Roof Construction and Covering, Roof Insulation.

J. USGBC: US Green Building Council
1. Leadership in Energy and Environmental Design; LEED Reference Guide, Version 4.0
2. USGBC Project Calculation Spreadsheet; www.usgbc.org

K. California Building Code

L. California Energy Commission (CEC)
1. Title 24 Section 118(i)3

M. SCAQMD – South Coast Air Quality Management
1. VOC Standards

1.05. **ADMINISTRATIVE REQUIREMENTS**

A. Coordination
1. Do not allow access to installation areas by other trades during roof coating installation.

B. Pre-bid Meeting
1. All manufacturer representatives interested in submitting a bid are required to attend a pre-bid conference ten (10) days prior to the bid opening.
2. Substitution limitations
   a. Submit a Roof Manufacturer certification letter during the pre-bid meeting, signed by the manufacturer, stating alternative material is equivalent to the specified product.
   b. Submit independent laboratory testing information verifying physical properties meet the specified performance criteria.
   c. Products accepted as equal to the specified product will be considered an alternate and presented as a bid addendum 5 days prior to bid opening.
   d. No changes or substitutions to the specified product will be accepted after bid opening.

C. Pre-installation Conference: Before starting roof deck construction, conduct conference at Project site.
1. Owner's Rep or Construction Manager to provide seven (7) days advance written notice ensuring attendance of the following key personnel:
   a. Owner, Architect, testing and inspecting agency representative, approved roofing installer's superintendent or foreman that is knowledgeable about specified system, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Discussion Topics:

a. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
b. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
c. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
d. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
e. Review governing regulations and requirements for insurance and certificates if applicable.
f. Review temporary protection requirements for the roofing system during and after installation.
g. Review roof observation and repair procedures after roofing installation.
h. Review installation and coordination requirements for warranty eligibility prior to pre-applied roof coating installation.
i. Review contract to ensure the full scope of work is covered.

3. Deliverables
   a. Via email, Owner's Rep or Construction Manager to provide detailed notes from the Pre-installation conference and a copy of the project specification to all participants in attendance.
4. Prior to the start of installation, notify Manufacturer's inspector forty-eight (48) hours prior to job start, schedule changes and prior to application of surfacing and reflective coat.

1.06. **SUBMITTALS**

A. Provide submittals in accordance with Section 01 33 00 Submittal Procedures.

B. Listed Manufacturer's Submittals
1. Action Submittals
   a. Product data
      1) Guide specification
      2) Safety data sheets
      3) Standard details
      4) Installation Instructions
      5) Technical data sheets
      6) Health Declaration Product Certificates (HPD)
   c. Shop Drawings: For Manufacturer's roofing system. Include roof plans, sections, details, and attachments to other work Certificates
   d. Material List of all items to be furnished and installed under this section.
   e. Fire Hazard Classification - Provide a letter certifying that roof membrane assembly qualifies for UL Class A fire hazard classification for the type of substrate(s), slope(s), insulation(s) (when applicable) and membrane(s) specified for this installation. Include a copy of the UL listing.
2. Informational Submittals
   a. Certification stating assembly components are supplied and warranted by single source Manufacturer:
      1) Certification stating Roof Manufacturer meets the following standards:
         a) Part of a single source manufacturer for Emulsions, Mastics, Roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.
         b) Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.
         c) Each manufacturing facility must implement a full-time quality control and oversight operating system.
         d) Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.

e) Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.

2) Sarbanes-Oxley Act (SOX) compliant with public access to the published annual report.

3) Statement stating Installer is authorized by the Roofing Manufacturer to complete Work as specified.

b. Applicator Approval:

1) Provide letter from manufacturer of roofing materials stating that applicator is acceptable to manufacturer.

c. Sample Warranty(s):

1) Provide copies of all applicable manufacturer's warranties

3. Closeout Submittals

a. A daily work log from the contractor is to be provided to the Manufacturer.

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

c. Final Warranty

A. Submittal of potential equal manufacturers not listed in specification:

1. Submittals shall be made not less than ten (10) days prior to bid date. Primary roof systems that have been reviewed and accepted as equals to the specified roof system will be listed in an addendum prior to bid date; only then will equals be accepted at bidding. All submittals which do not conform to the following requirements will be rejected.

2. Furnish in triplicate:

a. 8" x 10" mockup samples of the complete roof membrane and flashing membrane assemblies.

b. Latest edition of the roofing system manufacturer's specifications and installation instructions.

c. Detailed descriptive list of the materials proposed for use.

d. Copy of UL approval of the proposed roofing system for the required assembly and slope. No other testing agency approvals will be accepted.

e. Letter from the proposed primary roofing manufacturer confirming the number of years it has directly manufactured the proposed primary roofing system under the trade name and/or trademarks as proposed.

f. Complete list of material physical properties including solids. The owner reserves the right to request documentation from a nationally recognized independent lab certifying physical properties.

g. Copy of manufacturer's inspection form.

h. Qualifications of manufacturer's inspector(s)

i. Proposal from manufacturer for site specific quality control program.

j. Sample copy of the specified guarantee including terms and procedures for renewal.

k. Documentation that the manufacturer meets requirements of 1.07A.

1.07. **QUALITY ASSURANCE**

A. Manufacturer Qualifications

1. Manufacturer must not issue warranties for terms longer than they have been manufacturing and supplying specified products for a similar scope of Work.

2. Manufacturer must have a warranty reserve greater than two hundred and fifty million ($250,000,000) dollars.

3. Part of a single source manufacturer for roof coatings, Spray Polyurethane Foam (SPF), and EPDM, TPO, PVC roofing systems.

4. Incorporates a national manufacturing and production capabilities program including supply chain procurement teams and logistics management.

5. The Manufacturer must furnish as a single source all primary roofing materials with manufacturer's labels and have current listing in Underwriters Laboratory Directory. Materials must bear UL Classification marking on bundle, package or container indicating that materials have been produced under UL's Classification and Follow-up Service.

6. Each manufacturing facility must implement a full-time quality control and oversight operating system.

7. Participates in the Global Environmental, Social, and Governance (ESG) program to achieve Net Zero greenhouse gas emissions across the entire value chain by 2050.
8. Sarbanes-Oxley Act (SOX) compliant with public access to the published annual report.
9. The manufacturer shall employ a field inspector available for periodic inspections throughout construction and final inspections. Inspection reports are to be available to the Owner Representative on request.
10. The Manufacturer shall be a member in good standing with the Southern California Roofing Contractors Association, National Roofing Contractors Association, Construction Specifications Institute, and California Association of School Business Officials.

B. Contractor Qualifications
1. Authorized by Roofing Manufacturer to complete Work as specified.
2. 5 years minimum experience in Work as described in this section.
3. The Contractor must provide a list of ten (10) projects of equal size and difficulty per the specified roof system type.
4. The Contractor must provide a supervisor that can communicate with the Manufacturer's Inspector and Owner Representative.
5. Contractor must provide knowledgeable foreman who understands all aspects of the specification.
6. Contractor must provide:
   a. California Contractors License (California Projects Only).

1.08. **DELIVERY, STORAGE, AND HANDLING**

A. Delivery Requirements
1. Deliver material in manufacturer's original sealed and labeled containers and in quantities required allowing continuity of application.

B. Storage Requirements
1. Store materials as recommended by the Roofing Manufacturer and conforming to applicable safety regulatory agencies. Refer to all applicable data including, but not limited to, MSDS sheets, Product Data sheets, product labels, and specific instructions for personal protection.
2. Do not heat or store material containers at temperatures greater than 120ºF (49ºC).
3. Store materials out of direct exposure to the elements.
4. Product should be stored in closed containers.
5. Solvents:
   a. Keep solvents away from open flame or excessive heat.
6. Roll Goods:
   a. Store roll goods on a clean flat surface.
   b. When ambient temperatures are below 40°F (4°C), rolled materials must be stored in protected or heated areas and brought to the roof as needed for application.
7. Asphalt Adhesives:
   a. Store asphalt adhesives and cement in a heated area prior to use in cold weather.

C. Handling Requirements
1. Handle material in such a manner as to preclude damage and contamination with moisture or foreign matters.
2. Materials that are found to be damaged or stored in any manner, other than as stated above, shall be automatically rejected and shall be removed and replaced at the contractor's expense.
3. Provide adequate ventilation for protection from hazardous fumes.
4. Refer to the Roofing Manufacturer's published literature.

1.09. **SITE CONDITIONS**

A. Protection/Safety Requirements:
1. Do not overload the structure with building materials.
2. It is the responsibility of the installing Subcontractor to protect all surfaces not included in scope of Work from overspray including, but not limited to, windows, doors, adjacent areas, and vehicles.

a. Installing Subcontractor to post signs noting potential overspray hazard within 400ft (122 M) of applications.

3. The applicator will be held responsible for any damage caused to roof top equipment, roof penetrations, clogged drains (if not identified prior to starting the work) and damage to the building and grounds resulting from the execution of his work.
   a. All air intake ventilation equipment shall be turned off to prevent fumes from entering the building.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Protective coverings shall be secured against wind and shall be vented if used in conjunction with applications preventing collection and moisture.
6. Lock valves on tankers when not attended.
7. Cover or arrange air intakes to be turned off during the application of solvent-based materials.
8. No smoking signs must be posted as mandated by local fire ordinances.

B. Environmental Requirements.
1. Do not perform Work over saturated insulation or saturated substrates.
2. Ensure all preparation Work is completed prior to installing roof.
3. All equipment shall be grounded during operations.
4. Protect adjacent surfaces from staining and mechanical damage during application of roofing.
5. Never apply water-based emulsions when the ambient temperature is below 50°F (16°C) before the emulsion has cured to a tack-free black surface. Never apply within 6° of dewpoint. High humidity, fog and dew will greatly extend the time for emulsions to cure.
6. Before installing acrylic coatings, test the temperature of the roof with an infrared thermometer.
   a. If temperature exceeds (>140 °F / 60 °C), consult a Henry Technical Consultant regarding alternate installation requirements for acrylic coating.
      1) Do not install as specified in 3.09 – Surfacing Acrylic Coating.
7. Do not apply material during precipitation or when rain is expected during or after application, until the material is fully set.
   a. Follow Roofing Manufacturer's installation protocol.
8. Never apply solvent-based adhesives or coatings to a wet surface.
9. Do not perform Work on surfaces that are wet.

1.10. **WARRANTY**

A. Manufacturer Warranty
1. 07 01 50 – Maintenance of Membrane Roofing
   a. Gold Seal Warranty:
      1) Warrants system and installation; provides material and labor costs for repair for a period of [20] years from the date of installation completion as a result of any of the following:
      2) Manufacturing product defect
      3) Faulty Installer's workmanship

PART 2 - PRODUCTS

2.01. **ASSEMBLY MANUFACTURER**

A. Henry® a Carlisle Company
336 Cold Stream Rd.
Kimberton, PA 19442
(800) 486-1278
www.henry.com

B. Products by Tremco Roofing & Building Maintenance, Beachwood, OH and The Garland Company, Cleveland, OH equal to the specified materials are also approved.

C. Products by other manufacturers must be submitted ten (10) days prior for approval in accordance with Section 1.06 C of these specifications.

2.02. **PERFORMANCE CRITERIA**

A. Energy Performance:

1. Elastomeric White Roof Coating (ASTM D-6083)
   a. Initial solar reflectance, initial (ASTM C1549): 0.88
   b. Solar reflective index (SRI): 111
   c. Thermal emittance, initial (ASTM C-1549): 0.90
   d. Meets California Energy Commission – Title 24, Sec. 118

B. Tested fire response characteristics (ASTM E 108 or UL 790): Class A

2.03. **PRODUCT DELIVERY**

A. Bulk delivery material shall be accompanied by a Henry Company bill of lading.

2.04. **MATERIALS**

A. General: Refer to Project Scope of Work for applicable product references.

B. Existing Roof

C. Asphalt Emulsion - Meeting following requirements:

1. Pro-Grade 197 Asphalt Emulsion
   a. ASTM D-1227 Type III, Class I
   b. Color. Black
   c. Viscosity @ 77°F 8000-15000 cps (ASTM D2196)
   d. Density @ 77°F 8.7 lbs./gal (ASTM D-1475)
   e. Solids Content by Volume 49-53% (ASTM D-2697)
   f. Non-volatile Matter by Weight 47-53% (ASTM D-2939)
   g. Pliability @ 32°F No cracking or separating (ASTM D-2939)
   h. FM Certified
   i. Miami-Dade Certified
   j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

D. Chopped Fiberglass (Emulsion Reinforcement): Meeting the following requirements:

1. HE 189 Chopped Fiberglass:
   a. Color: White
   b. Appearance: Ropelike strands
   c. Fiber Diameter: 6 microns (min)
   d. Flashpoint: >212ºF (100ºC)
   e. Maximum VOS: 0 lbs/gal
   f. Maximum VOC: 0 g/l

E. Base Coat & Sealer- Meeting following requirements:

1. Pro-Grade 294 – Base Coat & Sealer
   a. Color: Grey
   b. Elongation: >250% (ASTM D-2370)
   c. Solids Content by Volume: >48% (ASTM D-2697)
   d. Tensile Strength, Initial: >150 psi (ASTM D-2370)
   e. Viscosity (Brookfield): 21,000-28,000 cPs (ASTM-2196)
   f. VOC Content (maximum): 50 g/l (APA Method 24)
   g. Weight per Gallon: 10.5 – 11.4 lbs. (ASTM D-1475)
   h. FM Certified
   i. Miami-Dade Certified
   j. UL Certified as a component within a Class “A” and “B” Fire Rated Roofing Covering

F. Elastomeric White Roof Coating - Meeting following requirements:

1. Pro-Grade 280 – Elastomeric White Roof Coating (ASTM D-6083)
   a. Color: White

b. Elongation: >250% (ASTM D-2370)
c. Elongation, after 1000 Hours Aging: >230% (ASTM D-2370)
d. Tear Resistance: > 80 lbs./in. (ASTM D-624)
e. Tensile Strength, Initial: >240 psi (ASTM D-2370)
f. Fungi Resistance: Zero Rating (No Fungi) – (ASTM G-21)
g. Low Temperature Flexibility, after 1,000 Hours Aging: Pass (no Cracking or Checking) – (ASYM D-6083)
h. Solids Content by Volume: >52-56% (ASTM D-2697)
i. Viscosity (Brookfield): 35,000-48,000 cPs (ASTM-2196)
j. VOC Content (maximum): 50 g/l (APA Method 24)
k. Water Swelling, Mass %: <20% (ASTM D-471)
l. Weight per Gallon: 11.0 – 11.3 lbs. (ASTM D-1475)
m. Solar Reflectance, Initial: 0.88 (ASTM C-1549)
n. Solar Reflectance, 3 Yr.: 0.73 (ASTM C-1549)
o. Thermal Emittance, Initial: 0.90 (ASTM C-1549)
p. Thermal Emittance, 3Yr.: 0.87 (ASTM C-1549)
q. Solar Reflectance Index (SRI), Initial: 111 (ASTM E-1980)
r. Solar Reflectance Index (SRI), 3 Yr.: 89 (ASTM E-1980)
s. Flash Point: Non-Flammable
t. FM Certified
u. Miami-Dade Certified
v. UL Certified as a component within a Class "A" and "B" Fire Rated Roofing Covering
w. Florida Approved
x. California Energy Commission – Tital 24, Sec. 118
y. Cool Roof Rating Council (CRRC) Rated
z. LEED Credits

G. Miscellaneous Products & Accessories
1. Flashing Cement - Meeting the following requirements:
a. Pro-Grade 155 - Flashing Cement
1) Complies with ASTM D-4586
2) Appearance: Black Fibrous Paste
3) Weight: 8.25-9.25 lbs/gal
4) Application Temperature: 20ºF (-7ºC) to 120ºF (49ºC)
5) Consistency: Trowel Grade
6) Flash Point: 105ºF (41ºC)
7) Maximum VOC: 290 g/l
b. Pro-Grade 161 – All Weather Flashing Cement:
1) Complies with ASTM D-4586 & ASTM D-3409
2) Appearance: Black Thick Paste
3) Weight: 8.25-9.25 lbs/gal
4) Application Temperature: 20ºF (-7ºC) to 120ºF (49ºC)
5) Consistency: Trowel Grade
6) Flash Point: 105ºF (41ºC)
7) Underwater Adhesion: 100%
8) Maximum VOC: 300 g/l
c. Pro-Grade 163 – Emergency Leak Repair Cement:
1) Complies with ASTM D-4586 & ASTM D-3409
2) Appearance: Soft Black Paste
3) Application Temperature: 0ºF to 120ºF
4) Consistency: Trowel Grade
5) Flash Point: 105ºF (ASTM D3278)
6) Underwater Adhesion: 100% (ASTM D3409)
7) Maximum VOC: 265 g/l (EPA Method 24)
8) Weight: 9.5-10.5 lbs./gal
9) Miami-Dade Certified
10) Can contribute to LEED certification credits

d. Pro-Grade 167 – Extreme Flashing Cement:
   1) Complies with ASTM D-4586 & ASTM D-3409
   2) Appearance: Black Thick Paste
   3) Weight: 8.5-9.5 lbs/gal
   4) Application Temperature: -20ºF (-29ºC) to 140ºF (60ºC)
   5) Consistency: Trowel Grade
   6) Flash Point: 105ºF (41ºC)
   7) Underwater Adhesion: 100%
   8) Maximum VOC: 275 g/l

2. Joint Sealant - Meeting following requirements:
   a. HE 289 - White Roof Sealant
      1) Complies with ASTM C-920, Class 25
      2) Color: White
      3) Appearance: Paste/mastic
      4) Weight: 11.4-11.8 lbs/gal
      5) Application Temperature: 50ºF (10ºC) and rising
      6) Flash Point: > 212ºF (100ºC)
      7) Maximum VOS: 0.42 lbs/gal
      8) Maximum VOC: 50 g/l

3. Repair Fabrics:
   a. Polyester - Meeting the following requirements:
      1) HE 195 Polyester Fabric:
      2) Color: White to Yellow White
      3) Weight: 3.0 oz./sq. yd.
      4) Elongation: 61-63% (ASTM D-1682)
      5) Mullen Burst: 176.8 lbs. (ASTM D-3786)
      6) Tensile Strength: 57.1 lbs. (ASTM D-1682)
      7) Trapezoidal Tear Strength: 16 lbs. (ASTM D-1117)
      8) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      9) Maximum VOS: 0 lbs./gal
   b. HE 196 Polyester Fabric:
      1) Color: White to Yellow White
      2) Weight. 2.9 oz./sq. yd.
      3) Elongation 25.8% (ASTM D-1682)
      4) Trapezoidal Tear Strength 14.2 lbs. (ASTM D-1117)
      5) Tensile 41 lbs. (ASTM D-1682)
      6) Mullen Burst 127 lbs. (ASTM D-3786)
      7) Volatile Organic Content (VOC) (ASTM D3960/EPA Method 24): 0 g/l max
      8) Maximum VOS: 0 lbs./gal
   c. HE 296 Elasto Tape Repair Fabric
      1) Complies with ASTM D-1688-80, Type III
      2) Color: White Polyester
      3) Appearance: Fabric
      4) Weight of Fabric: 1.5 oz/sq.yd
      5) Tensile Strength Film (Initial): 44 lbs/inch
      6) Trapezoidal Tear Strength: 18.5 lbs
      7) Maximum VOS: 0 lbs/gal
      8) Maximum VOC: 0 g/l
   d. Fiberglass - Meeting the following requirements:
      HE 183 Yellow Resin Coated Glass Fabric
      1) Complies with ASTM D-3019, Type III
      2) Color: Yellow
      3) Mesh Size: 20 x 10 Thread Count
      4) Appearance: Roll Mesh Fabric
      5) Tensile Strength Film (Initial): 75 lbs/inch
      6) Flash Point: > 212ºF (100ºC)
      7) Maximum VOS: 0 lbs/gal
      8) Maximum VOC: 0 g/l

4. White Armor Highly Reflective Granules
    a. Color: White
    b. Bulk Density: 90-100 lbs./cu ft.
    c. UL 790 Class “A” Fire Rating
    d. FM Standard 4470 for Class 1 Fire, Windstorm & Hail Classification Approval
    e. CRRC Rated – Prod ID 0626-0005
    f. California Title 24 Compliant
    g. SPFA Accreditation
    h. ICC-ES

PART 3 - EXECUTION

3.01. **GENERAL**

A. Professional knowledge and understanding of Henry Company’s Product Data is part of this specification.
B. Do not tear off or remove any more roofing than can be replaced the same day.
C. Remove and install new edge metal 24 gage, Bonderized in lower roofs or project needed.
D. Level the edge of the building using CDX plywood to prepare for the installation of new edge metal.

3.02. **EXAMINATION**

1. Verify substrates are in accordance with Roof Coating Manufacturer requirements and as specified in this Section prior to roof coating installation. Commencement of Work indicates installer acceptance of the substrate.
    a. Verify surfaces are sound, dry, clean, and free of oil, grease, dirt, excess mortar, frost, laitance, loose and flaking particles, or other contaminants.
    b. Verify substrates are continuous and secured.
    c. Verify metal flashings, wood blocking, skylights, scuppers, gutters, penetrations, and structures located within area of Work are leak free and in good working condition.
    d. Verify insulation and roofing membrane are not damaged or previously saturated with water.
    e. Do not install roof coating over rusted substrates.
2. Previously coated areas
    a. Contact Roof Coating Manufacturer for previously coated examination procedures.

B. Preinstallation Testing
1. Moisture detection survey, as applicable
    a. Visual inspection
    b. Moisture analysis, choose from the following:
        1) Infrared Thermography
        2) Nuclear Scan
        3) Electric Capacitance / Impedance Testing
        4) Roof core cut samples

C. Evaluation and assessment
1. Verify roof areas promote positive drainage. Contact Roofing Manufacturer for ponding area repair procedures.
2. Report in writing any unsatisfactory conditions that cannot be warranted.

3.03. **PREPARATION**

A. Protection of In-Place Conditions
1. Protect areas and surfaces not included in scope of Work against damage or soiling.
2. Secure protective coverings against wind and vent area if used in conjunction with applications preventing collection and moisture.
3. Post signs noting potential overspray hazard within four hundred (400) feet of applications.
4. Turn off air-intake ventilation equipment to prevent fumes from entering the building.

5. Post “No Smoking” signs near roof coating installation until vapors dissipate.

B. Surface Preparation
1. Surface cleaning
a. Confirm local ordinances and jurisdiction restrictions prior to selecting from the following cleaning methods.
b. Thoroughly clean roof surface of dirt, debris, loose granules and contaminates at and around repair area extending 18” beyond perimeter of defect.
c. Remove oil and other contaminates that may inhibit adhesion.
d. Clean and prepare existing membrane roofing taking caution not to inject water into roofing substrate.
2. Cleaning
a. Remove dirt, debris, loose granules, oil, and other contaminants.
b. Acceptable cleaning methods
1) Power broom
2) Dry vacuum
3) Air lance (2000 psi minimum)

3.04. **MEMBRANE ROOFING SYSTEM REPAIRS**

A. Existing Membrane and Insulation
1. Repair, removal, and replacement of existing roof membrane:
a. Completely remove existing roof membrane, wet insulation, and /or defective materials and replace roofing membrane to match existing in accordance with Roofing Membrane Manufacturer’s published literature.
b. Replace insulation and roofing membrane to match existing ensuring a continuous and flush substrate; secure in accordance with Roofing Membrane Manufacturer’s published literature.
c. Allow to cure a minimum of 24 hours.

B. Repair defects including defects, loose or torn seams, splits, cracks, holes, blisters, fishmouths, buckles, wrinkles, ridges, splits, deteriorated flashings, cracked metal edging, and any other defects affecting the water tightness of the roofing system using one of the following methods:
1. Reinforced Roofing Coating:
a. Install one (1) layer of Pro-Grade 294 – Base Coat & Sealer at three (1.5) gallons per square (24 wet mils) extending three (3) inches on each side of defect.
i. Center four (4) inch wide strip of Repair Fabric (HE 195/196 Polyester Fabric or HE 296 Elasto Tape Repair Fabric oover defect and fully embed repair fabric into roof mastic ensuring two (2) inches of repair fabric on each side of defect as described above.
b. Allow Pro-Grade 294 – Base Coat & Sealer to dry prior to subsequent Pro-Grade 294 – Base Coat & Sealer application.
c. Apply a second layer of Pro-Grade 294 – Base Coat & Sealer at three (1.5) gallons per square (24 wet mils) extending three (3) inches on each side of defect as described above ensuring repair fabric is fully coated and has a smooth and continuous watertight finish.
d. Allow Pro-Grade 294 – Base Coat & Sealer to cure seven (2) days prior to subsequent installation.
2. Reinforced Roofing Mastic:
a. Install one (1) layer of Flashing Cement at 1 gallon for every 6 square feet extending two (2) inches on each side of defect.
j. Center four (4) inch wide strip of HE 183 Yellow Resin Coated Glass Fabric over defect and fully embed repair fabric into roof mastic ensuring two (2) inches of repair fabric on each side of defect as described above.
b. Allow Flashing Cement to dry prior to subsequent Flashing Cement application.

c. Apply a second layer of Flashing Cement at 1 gallon for every 6 square feet extending two (2) inches on each side of defect ensuring repair fabric is fully coated and has a smooth and continuous watertight finish.
d. Allow Flashing Cement to cure seven (7) days prior to subsequent installation.

3. Foundation Coat:
a. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) extending three (3) inches on each side to ensure a smooth and continuous watertight finish.

3.05. **INSTALLATION: GENERAL REQUIREMENTS**

A. Install roofing products in accordance with roofing system manufacturer's details, application guide and scope of work for the site and these requirements.

B. Adhesives, primer, emulsion, reflective coat and sealants:
1. Thinning or alterations is not permitted.

C. Caulking
1. Replace deteriorated caulking.
2. Remove old sealant.
3. Wire brush and prime.
4. Replace with compatible Sealant or Flashing Cement.

D. Conduit and Pipe Supports:
1. Lift all supports for conduits and other pipes.
2. Install new Dura-Blok under conduit or pipes.
3. Reinforce under block with one layer of 606 80# Granulated Cap Sheet
4. cut 6 inches larger in all directions of block, granules side up, set in generous application of specified mastic prior to Monolithic surfacing.
5. Seal top of bolts, screws, etc., with Pro-Grade 167 – Extreme Flashing Cement.
6. Loosen brackets so pipes can expand and contract freely.

E. Roof Coatings:
1. Storage and Handling
a. Roof coating may settle during storage.
b. Mix roof coating prior to use with drill and mixer blade until consistent viscosity is achieved.
2. Roof Marking and Protection
a. Measure and mark area prior to roof coating installation.
b. Contact the Roofing Manufacturer for roof marking instructions.
1) Coverage rates are theoretical and do not account for material loss due to spraying, surface texture, and waste.
2) Install a test patch to verify coating achieves millage requirements.
3) Adjust application rates based on test patch results to meet specified requirements.

F. Walkways:
1. Install walkways in 4' sections allowing 2" spacing between sheets.
2. Cut and trim pieces as required to fit conditions.
3. Set walkway in spot applications of PG 167 - All Weather Flashing Cement.
4. Install two walking pads per AC unit and roof access.

3.06. **INSTALLATION: DETAILING AND FLASHING**

A. Drains:
1. Remove strainer, ring, and any other drain components.
2. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) extending twelve (12) inches beyond drain.

3. Fully embed either HE 195 or HE 196 reinforcement fabric into foundation coat extending ten (10) inches beyond drain. Using a soft bristled broom or paint roller brush reinforcement fabric for proper adhesion and removal of all voids.
4. Where more than one piece of either HE 195 or HE 196 reinforcement fabric is required:
   a. Coat side and end laps of embedded reinforcement fabric with Pro-Grade 197 Asphalt Emulsion ensuring complete coverage reinforcement fabric prior to installation of subsequent reinforcement fabric courses. Overlap of dry fabric is not acceptable.
   b. Lap ends of HE 195 or HE 196 reinforcement fabric four (4) inches where more than one piece is required to ensure a continuous watertight finish.
5. Allow Pro-Grade 197 Asphalt Emulsion to dry prior to subsequent foundation coat application.
6. Apply the second layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) fully encapsulating areas previously covered with a reinforced foundation coat.
7. After installing and drying, the polyester fabric seal the drain bowl with 3 courses of 289 White Roof Sealant and 189 yellow repair fabric.

B. Pipe Penetrations:
1. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) extending four (4) inches on horizontal surface and a minimum of eight (8) inches up vertical surface.
2. Center six (6) inch wide strip of either HE 195 or HE 196 reinforcement fabric at pipe upturn and fully embed reinforcement fabric into foundation coat ensuring three (3) inches of reinforcement fabric on both horizontal and vertical surfaces. Using a soft bristled broom or paint roller brush reinforcement fabric for proper adhesion and removal of all voids.
3. Allow Pro-Grade 197 Asphalt Emulsion to dry prior to subsequent foundation coat application.
4. Apply second layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) fully encapsulating areas previously covered with a reinforced foundation coat.

C. Pretreatment of existing, intact, and secure roof membrane seams:
1. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion at one (1) gallon per square (16 wet mils) extending four (4) inches on each side of existing roof membrane seam.
2. Center six (6) inch wide strip of either #195 or #196 reinforcement fabric over existing roof membrane seam and fully embed reinforcement fabric into foundation coat ensuring three (3) inches of reinforcement fabric on each side of existing roof membrane seam. Using a soft bristled broom or paint roller brush reinforcement fabric for proper adhesion and removal of all voids.
3. Allow Pro-Grade Asphalt Emulsion to dry prior to subsequent foundation coat application.
4. Apply a second layer of Pro-Grade Asphalt Emulsion at two (2) gallons per square (32 wet mils) extending a minimum four (4) inches on each side of existing roof membrane seam ensuring reinforcement fabric is fully coated and has a smooth and continuous watertight finish.

D. Roof Curb and Parapets:
1. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) extending four (4) inches on horizontal surface and a minimum of eight (8) inches up vertical surface.
2. Center six (6) inch wide strip of either HE 195 or HE 196 reinforcement fabric at parapet upturn and fully embed reinforcement fabric into foundation coat ensuring three (3) inches of reinforcement fabric on both horizontal and vertical surfaces. Brush reinforcement fabric for proper adhesion and removal of all voids.
3. Allow Pro-Grade 197 Asphalt Emulsion to dry prior to subsequent roof coating application.
4. Apply second layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) fully encapsulating areas previously covered with a reinforced foundation coat.
5. Seal the top edge of the fabric polyester with three courses of 289 White Roof Sealant and 189 yellow repair fabric.

E. Valleys and Waterways:
   a. Install one (1) layer of Pro-Grade 197 Asphalt Emulsion in direction of valley slope at three (3) gallons per square (48 wet mils) extending Pro-Grade 197 Asphalt Emulsion up twelve (12) inches each side of valley.
   b. Center minimum eighteen (18) inch wide strip of either HE 195 or HE 196 reinforcement fabric over existing roof membrane valley and fully embed reinforcement fabric into foundation coat ensuring minimum nine (9) inches of reinforcement fabric on each side of valley. Using a soft bristled broom or paint roller brush reinforcement fabric for proper adhesion and removal of all voids.
   c. Where more than one piece of either HE 195 or HE 196 reinforcement fabric is required:
      1) Coat side and end laps of embedded reinforcement fabric with Pro-Grade 197 Asphalt Emulsion ensuring complete coverage of reinforcement fabric prior to installation of subsequent reinforcement fabric courses. Overlap of dry fabric is not acceptable.
      2) Lap ends of either HE 195 or HE196 reinforcement fabric four (4) inches where more than one piece is required to ensure a continuous watertight finish.
   d. Allow foundation coat to dry prior to subsequent Pro-Grade 197 Asphalt Emulsion application.
   e. Apply second layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square (48 wet mils) fully encapsulating areas previously covered with a reinforced foundation coat.

F. Wall Flashings:
   1. Cover wall with one layer of polyester fabric embedded into 4 gallons per 100 sq. ft. of Pro-Grade 197 Asphalt Emulsion.
   2. Seal the top edge of the fabric polyester with three courses of 289 White Roof Sealant and 189 yellow repair fabric.
   3. Extend wall flashing over wall and down outside face 2 inches or 5-course top edge with specified mastic and HE 183 Yellow Resin Coated Glass Fabric.

3.07. **INSTALLATION: RESTORATION/MAINTENANCE OF MEMBRANE ROOFING SYSTEMS (H1-MR-CR):**

A. Application rates apply to both Material Plus and Gold Seal Warranties.
   1. Smooth surfaces:
      a. Starting at low edge of roof, install one (1) layer of Pro-Grade 197 Asphalt Emulsion at three (3) gallons per square [Forty-eight (48) wet mils; Nineteen (19) mils DFT] extending forty-four (44) inches wide perpendicular to slope and up a minimum of eight (8) inches onto vertical surfaces.
      b. Immediately embed full width of either HE 195 or HE 196 reinforcement fabric. Using a soft bristled broom or paint roller brush reinforcement fabric for proper adhesion and removal of all voids.
      c. Allow Pro-Grade 197 Asphalt Emulsion to dry prior to subsequent foundation or topcoat application.
      d. Coat side and end laps of embedded either HE 195 or HE 196 reinforcement fabric with foundation coat ensuring complete coverage of reinforcement fabric prior to installation of subsequent reinforcement fabric courses. Overlap of dry fabric is not acceptable.
      e. Install either HE 195 or HE 196 subsequent reinforcement fabric courses from lowest to highest point on roof ensuring subsequent reinforcement fabric courses overlap embedded reinforcement fabric a minimum of four (4) inches on side and end laps.
      f. Install either HE 195 or HE 196 reinforcing fabric to toe of cant where reinforced coating intersects vertical transitions.
   2. Final Reinforced Emulsion Topcoat
      a. Cover reinforced surfaces with not less than 9 gallons (34l) per 100 sq. ft of undiluted Pro-Grade 197 Asphalt Emulsion. Evenly blend emulsion with 3 lbs. (1.4kg) of ¾" (19mm) long chopped glass reinforcing sprayed with equipment approved by Henry

Company. Tufting of the glass fibers is not acceptable. Spray emulsion in a pattern into laps of base sheet so that when system is dry, there are no voids or bridging of glass over any seam of the membrane.

3. Allow to dry and cure before installing chopped glass.

3.08. **INSTALLATION: SURFACING (MONOLITHIC SYSTEM)**

A. Protect adjacent walls not scheduled for emulsion and reflective coating. Protect equipment, roof top units, etc. from overspray.

B. Cover prepared surfaces with PG 197 Asphalt Emulsion at rate of 9 gallons per 100 ft^2. to achieve 145 wet mils (79 dry mils). Evenly blend emulsion with ¾" Henry 189 Fiberglass Roving reinforcing at a rate of 3 lbs. per 100 ft^2 sprayed with equipment approved by Henry Company. Tufting of the glass fibers is not acceptable.

C. Spray emulsion in a pattern into laps of membrane so that when system is dry, there are no voids or bridging of glass over any seam of the membrane.

D. Spray base flashings and other designated surfaces with the Monolithic System.

E. Allow 7 - 10 days to dry and cure in hot, dry weather, and 10-14 days in cold weather. Contact a Henry Technical Representative with any questions.

3.09. **SURFACING – REFLECTIVE COATING**

A. As soon as emulsion surfacing has cured (tack-free and black), clean the surface of dust and debris. After 7 - 10 days to dry and cure in hot, dry weather, and 10-14 days in cold weather. Power wash roof surface and scrub out any pockets of residue.

1. Acrylic
   a. Apply Pro-Grade 294 Elastomeric Basecoat & Sealer at the rate of 2 gallons per 100 square feet (.8l/m²) in one coat (18 mils dry film thickness).
   b. Allow Basecoat to dry thoroughly for a minimum of 24 hours between coats.
   c. Apply 1st top coat at right angles to base coat
   d. Apply 1st layer of Topcoat Pro-Grade 280 White Elastomeric Roof Coating at the rate of 1 1/2 gallons per 100 square feet in one (.6l/m²) coat (13 mils dry film thickness).
   e. Broadcast 20 lbs. of ceramic granules into wet Pro-Grade 280 Topcoat & Sealer over entire surface
   f. Allow 1st layer of Topcoat to dry thoroughly for a minimum of 24 hours between coats.
   g. Apply 2nd layer of Topcoat at right angles to 1st layer of Topcoat.
   h. Apply 2nd layer of Topcoat Pro-Grade 280 White Elastomeric Roof Coating at the rate of 2 gallons per 100 square feet in one (.8l/m²) coat (18 mils dry film thickness).

B. Allow to dry between coats. Allow to dry thoroughly for a minimum of 24 hours between coats

C. Any areas that peel must be redone before the project is considered complete.

3.10. **INSTALLATION – METAL EDGING**

A. Extend the top layer of base sheet over edge of roof approximately 2".

B. Around the edge of the building, install a treated wood nailer.

C. Seal existing roof with the new wood nailer with one strip of 12” of HE 600 Ruf-Tac.

D. Install new Bonderized edge metal 24 gage with continuous click, with a minimum of 4” of flange and ¼ of rise.

E. Install metal flange over completed membrane, but before application of surfacing. Set the metal flange in the trowel application of Flashing Cement. Nail 3” O.C. staggered. Install 3 pan screws in every metal lap and seal with Three Courses of 183 Yellow Fabric and 167 Extreme Rubberized Flashing Cement.

F. Overprepared surface, prime with #910 Asphalt Primer and install 12-inch wide 600 Ruf-Tac over the metal flange and extend onto the field of the roof.

G. Seal gaps between the Ruf-Tac and metal edging with 163 Emergency Leak Flashing Cement and broadcast granules. (Allow it to dry for 24 hours.)

H. Install on top of the Ruf-Tac 1 extra layer of Polyester embedded in 197 Asphalt Emulsion.

3.11. **SITE QUALITY CONTROL**

A. Site Tests and Inspections
   1. Observe roofing installation during the following phases:
      a. Substrate verification
      b. Roofing installation start
      c. Final inspection of roofing work completed

B. Limit traffic on newly coated roof surfaces for a minimum of two (2) days. Damage to surface by other trades shall not be the responsibility of the installing Subcontractor.

C. Final Observation and Verification:
   1. Final inspection of roof coating membrane assembly shall be carried out by the Owner's representative, the installing Subcontractor, or Roofing Manufacturer as required by warranty.
   2. Gold Seal Warranty requires Manufacturer final observation and verification for warranty issuance.
      a. Contact Roofing Manufacturer for warranty issuance requirements.

3.12. **CLEANING**

A. Promptly as the Work proceeds, and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.

B. Check area to ensure cleanliness and remove debris, equipment, and excess material from the site.

C. Site Cleanup
   1. Test all drains to confirm they are free flowing and clear of debris.
   2. Clean gutters and downspouts as needed of all debris.
   3. Any deficiencies found during final inspection will be corrected within 5 working days and will be re-inspected by a Manufacturer's Representative and Owner's Representative.
   4. Leave premises clean to complete satisfaction of the Owner.

D. Waste Management
   1. As the Work proceeds, and upon completion, promptly clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing Work.
   2. Clean soiled surfaces, spatters, and damage caused by Work of this Section.
   3. Dispose of roof coating per local code ordinances.

3.13. **PROTECTION**

A. Protect roof coating from damage by other trades.

B. Limit traffic on roof coated surfaces for a minimum of 2 days.

3.14. **MAINTENANCE**

A. Operations and Maintenance Review:
   1. After completion and acceptance of project, manufacturer's representative to review in person or virtually via a video call with owner or owner's representative, the maintenance guidelines for specified assembly.

END OF SECTION

1244 N ANAHEIM BLVD ANAHEIM, CA 92801-2504
Phone: (714) 449-2350
Fax: (714) 449-2355

1/4" PER FT. FULL TAPER SYSTEM TO THE PERIMETER EDGES. [20psi PolyIso - Standard Facer (Type II, Class 1, Grade 2)]

Project Information

Project Name	COLUMBUS MIDDLE SCHOOL	**Filing Number**	F26-04094
Owner Name		**Quote ID**	Q260205-86
Address		**Quote Date**	02/05/2026
City	Tustin	**Expires**	60 DAYS
State	CA	**Bid Date**	02/06/2026 02:00 PM
County		**Published By**	Brian Billingsley
Branch	Anaheim CA 132		brian.billingsley@QXO.com

Tapered Insul-Takeoff

Specifications

Manufacturer	HENRY A CARLISLE COMPANY
Insulation	20psi PolyIso - Standard Facer (Type II, Class 1, Grade 2)
Design	ASSUMED 1/4" PER FT. FULL TAPER SYSTEM TO THE PERIMETER EDGES.
Additional Information	Base Layer, Coverboard & Sumps are not included in this quote.
Addenda	
Estimator	Brian Billingsley, (480) 229-6211, brian.billingsley@QXO.com

F26-04094-BUILDING G ONLY! — $12,150.00

Area of Tapered	59.93 Sq	Area of Crickets	0.10 Sq
Minimum Thickness	0.50"	Minimum Thickness	0.50"
Maximum Thickness	6.38"	Maximum Thickness	1.30"
Total Applied	94.20 Sq	Avg R-Value	17.56
Total Handled	101.76 Sq		
Truckload Qty*	0.62		

* Based on 44 (4x4) pallets per truckload

Products

Type	Description	Slope/LF	Thickness
Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/4	
Fill	4.0 X 4.0 POLYISO 20 PSI FLAT		2, 4"
Cricket Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/2	

F26-04094-BUILDING H ONLY! $12,355.00

Area of Tapered	60.40 Sq	Area of Crickets	0.19 Sq
Minimum Thickness	0.50"	Minimum Thickness	0.50"
Maximum Thickness	6.38"	Maximum Thickness	1.40"
Total Applied	95.07 Sq	Avg R-Value	17.59
Total Handled	103.52 Sq		
Truckload Qty*	0.63		

* Based on 44 (4x4) pallets per truckload

Products

Type	Description	Slope/LF	Thickness
Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/4	
Fill	4.0 X 4.0 POLYISO 20 PSI FLAT		2, 4"
Cricket Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/2	

F26-04094-BUILDING J ONLY! $11,460.00

Area of Tapered	57.33 Sq	Area of Crickets	0.18 Sq
Minimum Thickness	0.50"	Minimum Thickness	0.50"
Maximum Thickness	6.13"	Maximum Thickness	1.40"
Total Applied	89.40 Sq	Avg R-Value	17.04
Total Handled	97.76 Sq		
Truckload Qty*	0.58		

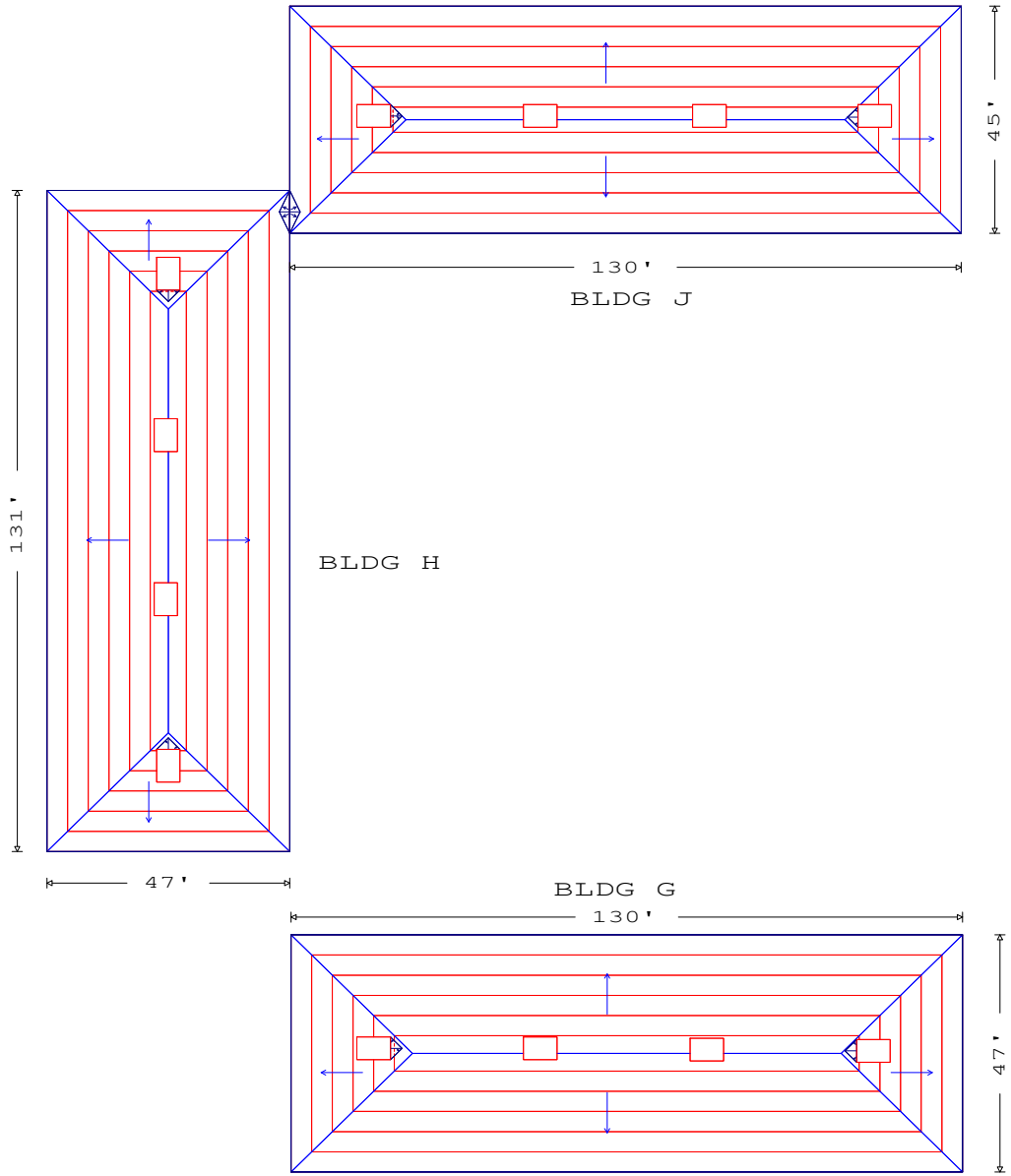
* Based on 44 (4x4) pallets per truckload

Products

Type	Description	Slope/LF	Thickness
Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/4	
Fill	4.0 X 4.0 POLYISO 20 PSI FLAT		2, 4"
Cricket Tapered	4.0 X 4.0 POLYISO 20 PSI TAPERED	1/2	

Notes

- 1) SQ BY AREA MUST BE VERIFIED BY CONTRACTOR BEFORE SHIPMENT.
- 2) QUOTE IS SUBJECT TO CONTRACTOR/ARCHITECT APPROVAL.
- 3) ADD SPECIFIED BASE LAYER SEPARATELY AS REQUIRED.
- 4) ADD SPECIFIED OVERLAY SEPARATELY AS REQUIRED.
- 5) SUMP MATERIAL IS NOT INCLUDED IN QUOTE.



IMPORTANT NOTE- The dimension listed and areas shown on this Thumbnail represent our interpretation of the Tapered Insulation requirements for this project. It is the contractor's responsibility to verify that the actual project dimensions and areas identified are consistent with our interpretation. Please contact the Tapered Designer listed on this quote ASAP if any inconsistencies are discovered.

QXO ENGINEERING	Project: COLUMBUS MIDDLE SCHOOL	Job Number: F26-04094	2026/02/05 08:52

Quote Disclaimer/Notes

- Please be advised that pending tariffs could inordinately increase domestic costs on imported products and QXO can only honor a manufacturer's quote to the same extent that the manufacturer honors its quote to QXO.
- Where project pricing is based on full truckload quantities; warehouse orders cannot be sold at the full truck price.
- All quotes are subject to freight, material/fuel surcharges, hazmat fees, and deficit freight fees for partial truck shipments.
- Quantities and materials listed are based on our interpretation of the project, it is the customer’s responsibility to review all plans and specs for accuracy.
- Listed quantities are estimates only, QXO will not be responsible for overages or shortages on the quantities provided.
- Non-stock and special order material cannot be returned to a QXO facility.
- Please refer to the project quote # when placing an order for this project.



Vector Environmental Consulting Inc.
18851 Bardeen Avenue Suite 205
Irvine, CA 92612
Phone: (949) 526-4510

Asbestos Inspection Report

Site Information:

Peters Canyon Elementary School
26900 Peters Canyon Road
Tustin, CA 92782

Owner Information:

Tustin Unified School District
1302 Service Road
Tustin, CA 92780

Date: February 4th, 2026

Vector Environmental Consulting Inc.
18851 Bardeen Avenue Suite 205
Irvine, CA 92612
Phone: (949) 526-4510

Date: February 4th, 2026

Site Information: Peters Canyon Elementary School
26900 Peters Canyon Road
Tustin, CA 92782

Owner Information: Tustin Unified School District
1302 Service Road
Tustin, CA 92780

Subject: Asbestos Inspection Report

Vector Environmental Consulting Inc. conducted an asbestos inspection specific to roofing materials at the above-mentioned address. All suspect materials were sampled in accordance with the regulations. Sampling methodology, laboratory reports and recommendations can be found on subsequent pages of this report.

Regulatory Requirements

EPA's air toxics regulation for asbestos is intended to minimize the release of asbestos fibers during activities involving the handling of asbestos.

Air toxics regulations under the Clean Air Act specify work practices for asbestos to be followed during demolitions and renovations of all facilities, including, but not limited to, structures, installations, and buildings. The regulations require a thorough inspection where the demolition or renovation operation will occur.

The EPA's regulations (40 CFR 61 Subpart M) in reference to asbestos containing materials are enforced locally by Air Pollution Control Districts and/or Air Quality Management Districts. South Coast Air Quality Management District (SCAQMD) is the governing agency regarding asbestos containing materials in Los Angeles, Orange, Riverside and San Bernardino Counties. Their rule 1403 mandates all sampling requirements and regulates the removal and disposal of asbestos containing materials within these regions.

Other areas such as San Diego County utilize different regulatory authorities, such as, San Diego Air Pollution Control Division and their rule 1206 for local enforcement of asbestos. Ensure your contactor and/or consultant follow the local regulations required for inspections and removals.

Sampling Methodology

Vector Environmental staff adheres to all federal and local regulations during inspections. Our staff utilizes safe work practices during all sampling procedures to ensure the occupants of the structure are not exposed to unwanted hazardous materials. Our inspections range from visual verification and assumptions to physical sampling and laboratory analysis. Sampling of materials during this inspection comply with the provisions of 40 CFR Part 763.86. David G Johnson (CAC #22-6940) and Levi Misenhimer (CSST #24-7747) conducted this inspection on February 3rd, 2026.

Vector Environmental incorporates the use of leak tight containers and physical markings to identify the location, and sample type of the material collected. These samples are further logged on a chain of custody and sampling diagram, both of which, can be found on ensuing pages of this report. All sampling was conducted following the provision of 40 CFR Part 763.86.

All of the samples collected during our inspection are transferred to an accredited laboratory who has participated in the National Voluntary Laboratory Accreditation Program (NVLAP). Vector Environmental utilizes the services of EmLab P&K, LLC (NVLAP 200757-0) 2841 Dow Avenue, Suite 300, Tustin, CA 92780 (866) 465-6653.

Laboratory Analysis

Laboratories are required to adhere to an additional set of regulations (40 CFR part 763, Section 1, Appendix A, Polarized Light Microscopy) to analyze bulk samples of suspected asbestos containing materials.

A low-power binocular microscope, preferably stereoscopic, is used to examine the bulk samples received by the investigator. Bulk samples of building materials taken for the identification and quantitation of asbestos are first examined for homogeneity at low magnification with the aid of a stereomicroscope. Once the homogeneity is determined the samples are analyzed by each present layer. The samples are commonly reported in % by weight.

Asbestos containing materials are materials found to contain greater than one percent asbestos by weight utilizing Polarized Light Microscopy (PLM); However, this analysis is not without it flaws. PLM analysis is only accurate down to ten percent of a materials' weight. Thus, any result found to contain anything less than ten percent is the laboratory's best guess at composition.

When a material contains suspected fibers in such a low concentration that a laboratory technician cannot accurately determine if the material is likely over one percent, a less than one percent or "trace" asbestos result is given. If a less than one percent or "trace" asbestos result is received, a Certified Asbestos Consultant (CAC) is required to either assume the material to contain greater than one percent or conduct further analysis of the material utilizing the 1000 point-count method (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EM-AS-S-1262). Once the materials have been accurately analyzed utilizing this method, reports can reveal a content of as low as less than one tenth of one percent. These results are then interpreted by the CAC and determined the regulations implicated on the materials.

Even trace amounts of asbestos can be regulated by agencies other than the EPA, such as, OSHA.

Suspect Materials

Suspect materials are an indicator of sampling requirements within a structure. Areas can be considered homogeneous in composition of the materials are of like condition, application, and age. These homogeneous areas are compiled to determine the number of samples required for each material. As the consultant a CAC makes the determination for homogenous areas. With this information the consultant determines the number of samples needed for an accurate representation of the structure's composition.

Examples of Suspect Materials (including but not limited to):

- Vinyl Floor Tile
- Flooring Mastic
- Plaster
- Drywall & Joint Compound
- Window Putty
- Linoleum
- Acoustic Ceiling Texture
- Ducting & Registers
- Composition Roofing
- Penetration & Patch Mastic
- Stucco
- Asphalt
- Concrete

Vector Environmental uses this information to determine the sampling areas of a structure and compiles our data for use in the field. The above-mentioned materials are NOT inclusive of ALL suspect materials; rather, an example of materials that could potentially contain asbestos within a structure.

Below is a List of Suspect Materials Collected During This Inspection:

- Composition Roofing
- Roofing Mastic

Results

As mentioned earlier in this document Vector Environmental collects these samples and submits them to an accredited laboratory for analysis. EmLab P&K, LLC (NVLAP 200757-0) 2841 Dow Avenue, Suite 300, Tustin, CA 92780 (866) 465-6653.was utilized for this project.

The table below illustrates the materials at the site that were determined by the laboratory to contain greater than one percent asbestos by weight. Some areas may be combined for homogeneity during the inspections process. Therefore, some areas of similar condition found at the site may not be sampled specifically. The quantities provided in the table below are an estimation of the materials on site and should not be used for bidding purposes. It is the responsibility of the contractor to conduct "take-offs" for their own work.

Asbestos:

Material	Location	Quantity
No Asbestos Detected		

Summary

Although we aggressively search all areas of the structure (wall cavities, plenums, etc.) additional suspect materials and/or debris may be present in concealed spaces but will only be accessible during the course of demolition activities. Care must be exercised when accessing these areas. Any suspect materials encountered during the course of demolition/renovation activities that were not previously sampled must be presumed to be asbestos containing until sampled and proven otherwise.

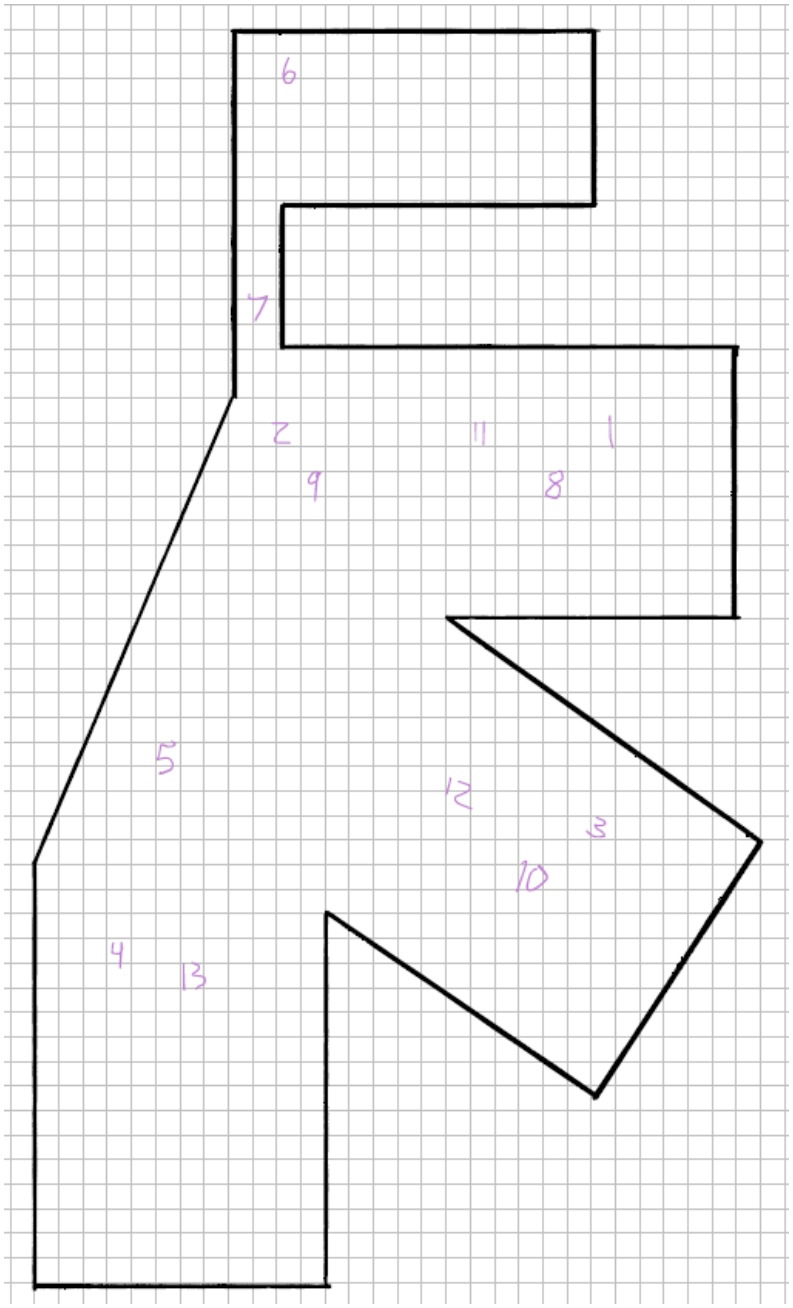
Vector Environmental Consulting Inc.



David G Johnson
President
Disabled Veteran Business Enterprise # 2026880
Certified Asbestos Consultant #22-6940
Lead Inspector/ Assessor #9289

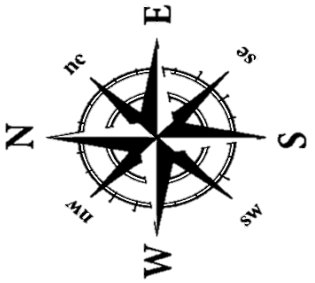
Site Diagram(s)

Site Diagram



Legend	

Notes:



In some cases samples have been taken from structures built in the same era of construction, and considered homogeneous in other structures.

Sample Numbers Are Noted In Red

Sampling Table

Date: February 4th, 2026 Collected By: David Johnson

Location: Peters Canyon Elementary School
26900 Peters Canyon Road
Tustin, CA 92782

Building #	Material	Sample #	Results	Condition	F/NF	Sample Location
Main Building	Composition Roofing	1	ND	Good	N/A	400 Wing
Main Building	Composition Roofing	2	ND	Good	N/A	100 Wing
Main Building	Composition Roofing	3	ND	Good	N/A	300 Wing
Main Building	Composition Roofing	4	ND	Good	N/A	200 Wing
Main Building	Composition Roofing	5	ND	Good	N/A	100 Wing
Main Building	Composition Roofing	6	ND	Good	N/A	MPR
Main Building	Composition Roofing	7	ND	Good	N/A	Canopy
Main Building	Roofing Mastic	8	ND	Good	N/A	400 Wing
Main Building	Roofing Mastic	9	ND	Good	N/A	100 Wing
Main Building	Roofing Mastic	10	ND	Good	N/A	200 Wing
Main Building	Composition Roofing	11	ND	Good	N/A	400 Wing
Main Building	Composition Roofing	12	ND	Good	N/A	200 Wing
Main Building	Composition Roofing	13	ND	Good	N/A	300 Wing

ND- No Asbestos Detected
NF- Non-Friable
F- Friable

Laboratory Reports

eurofins | Built Environment Testing

HAZARDOUS MATERIALS CONSULTING & INSPECTION SERVICES
VECTOR
ENVIRONMENTAL CONSULTING INC.
100% VETERAN OWNED & OPERATED

Report for:

David Johnson
Vector Environmental Consulting Inc.
18851 Bardeen Avenue
Suite 205
Irvine, CA 92612

Regarding: Eurofins Built Environment Testing West, LLC
Project: 26900 Peters Canyon Road; Tustin, CA 92782
EML ID: 4399859

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 02-03-2026

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 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 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
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Vector Environmental Consulting Inc.
C/O: David Johnson
Re: 26900 Peters Canyon Road; Tustin, CA 92782

Date of Sampling: 02-03-2026
Date of Receipt: 02-03-2026
Date of Report: 02-03-2026

ASBESTOS PLM REPORT

Total Samples Submitted:	13
Total Samples Analyzed:	13
Total Samples with Layer Asbestos Content > 1%:	0

Location: 1, 400 Wing, Composition Roofing (Flat) Lab ID-Version‡: 22065469-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Black Roofing Felt 2	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 2, 100 Wing, Composition Roofing (Flat) Lab ID-Version‡: 22065470-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Black Roofing Felt 2	ND
Brown/Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: 3, 300 Wing, Composition Roofing (Flat) Lab ID-Version‡: 22065471-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	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. 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
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Vector Environmental Consulting Inc.
C/O: David Johnson
Re: 26900 Peters Canyon Road; Tustin, CA 92782

Date of Sampling: 02-03-2026
Date of Receipt: 02-03-2026
Date of Report: 02-03-2026

ASBESTOS PLM REPORT

Location: 4, 200 Wing, Composition Roofing (Flat) Lab ID-Version‡: 22065472-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Black Roofing Felt 2	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 5, 100 Wing, Composition Roofing (Flat) Lab ID-Version‡: 22065473-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 6, MPR, Composition Roofing (Flat) Lab ID-Version‡: 22065474-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Black Roofing Felt 2	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Poor

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Eurofins Built Environment Testing West, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Vector Environmental Consulting Inc.
C/O: David Johnson
Re: 26900 Peters Canyon Road; Tustin, CA 92782

Date of Sampling: 02-03-2026
Date of Receipt: 02-03-2026
Date of Report: 02-03-2026

ASBESTOS PLM REPORT

Location: 7, Canopy, Composition Roofing (Flat)

Lab ID-Version‡: 22065475-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Material	ND
Composite Non-Asbestos Content:	20% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 8, 400 Wing, Roof Mastic

Lab ID-Version‡: 22065476-1

Sample Layers	Asbestos Content
Gray/Black Mastic	ND
Composite Non-Asbestos Content:	5% Talc
Sample Composite Homogeneity:	Good

Location: 9, 100 Wing, Roof Mastic

Lab ID-Version‡: 22065477-1

Sample Layers	Asbestos Content
Gray/Black Mastic	ND
Composite Non-Asbestos Content:	5% Talc
Sample Composite Homogeneity:	Good

Location: 10, 200 Wing, Roof Mastic

Lab ID-Version‡: 22065478-1

Sample Layers	Asbestos Content
Gray/Black Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

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Eurofins Built Environment Testing West, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Vector Environmental Consulting Inc.
C/O: David Johnson
Re: 26900 Peters Canyon Road; Tustin, CA 92782

Date of Sampling: 02-03-2026
Date of Receipt: 02-03-2026
Date of Report: 02-03-2026

ASBESTOS PLM REPORT

Location: 11, 400 Wing, Composition Roofing (Shingles) Lab ID-Version‡: 22065479-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Material	ND
Brown/Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: 12, 200 Wing, Composition Roofing (Shingles) Lab ID-Version‡: 22065480-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Material	ND
Brown/Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: 13, 300 Wing, Composition Roofing (Shingles) Lab ID-Version‡: 22065481-1

Sample Layers	Asbestos Content
Black/White Roofing Material	ND
Black Roofing Material	ND
Brown/Black Roofing Felt	ND
Composite Non-Asbestos Content:	20% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

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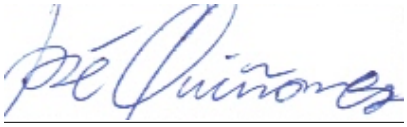
Client: Vector Environmental Consulting Inc.
C/O: David Johnson
Re: 26900 Peters Canyon Road; Tustin, CA 92782

Date of Sampling: 02-03-2026
Date of Receipt: 02-03-2026
Date of Report: 02-03-2026

ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Jose Quinones

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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".

Lab Report Number:

Chain Of Custody

Vector Environmental Consuling Inc.
18851 Bardeen Avenue, Suite 205
Irvine, California 92612
Phone: (949) 526-4510
Email: d.g.johnson77@gmail.com

Project Name:	26900 PETERS CANYON ROAD
Project Address:	TUSTIN, CA 92782
Sampling Technician:	Levi Misenhimer
Date:	2/3/26

004399859

Special Instructions: *Do not composite analyze samples.*

Analysis Information

Turn Around Time:

Rush (3 Hour)	Rush (Same Day)	~~Rush (Next Day)~~ LMM	Standard

Analysis Required:

PLM	PCM - NIOSH 7400	TEM - NIOSH 7402	TEM - AHERA	Lead Waste Character	Lead Flame - AA	Fungal Spore Count	Fungal Direct Microscope

Sampling Information

Sample Number	Sample Type	Location	Start Time	Stop Time	Flow Rate	Material
1	BULK	400 WING				COMPOSITION ROOFING (FLAT)
2		100 WING				
3		300 WING				
4		200 WING				
5		100 WING				
6		MPR				PLMM
7		CANOPY				
8		400 WING				ROOF MASTIC
9		100 WING				
10		200 WING				
11		400 WING				COMPOSITION ROOFING (SHINGLES)
12		200 WING				
13		300 WING				

Relinquished By (print): Levi Misenhimer Signature: Levi M. Date Relinquished: 2/3/26 Time Relinquished: 0832

Received By (print): ARMANDO ISAIS Signature: [signature] Date Received: 2/3/26 Time Received: 0835

Certifications

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

David G Johnson

Name



Certification No. **22-6940**

Expires on **01/21/2027**

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 Site Surveillance Technician

Levi M Misenhimer

Name



Certification No. **24-7747**

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.

Laboratory Certifications

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200757-0

Eurofins Built Environment Testing West- Tustin, CA

Tustin, 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).

2026-01-01 through 2026-12-31

Effective Dates

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Eurofins Built Environment Testing West- Tustin, CA
2841 Dow Avenue, Suite 300
Tustin, CA 92780
Quynh Nguyen
Phone: 800-651-4802
Email: quynh.nguyen@et.eurofinsus.com
https://www.eurofinsus.com/environment-testing/

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 200757-0

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

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Cardinal
ENVIRONMENTAL
CONSULTANTS INC.

Asbestos & Lead Inspection Report

Haz-Mat Survey

Site:

Columbus Middle School
17952 Beneta Way
Tustin, CA 92780

Prepared for:

Tustin USD
300 South C Street
Tustin, CA 92780

Date: November 20th, 2024
Revised 1/13/2025

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 730-5931
Fax: (714) 730-1697

Date: November 20th, 2024
Revised 1/13/2025

Owner/Client: Tustin USD
300 South C Street
Tustin, CA 92780

Site Address: Columbus Middle School
17952 Beneta Way
Tustin, CA 92780

Subject: **Asbestos Inspection Report (Buildings H, K, and E)**

ACM Survey

To whom it may concern:

Cardinal Environmental Consultants conducted a pre-renovation asbestos inspection at Columbus Tustin Middle School. The survey is specific to buildings H, K, and E. The campus is composed of many various structures, mostly bare a stucco-based exterior. All suspect material has been sampled and the results are in the latter pages of this report.

Regulatory Compliance:

On November 20th, 2024, Cardinal Environmental Consultants Inc conducted an asbestos survey at Columbus Tustin Middle School. The survey was completed in compliance with the federal AHERA (Asbestos Hazard Emergency Response Act) 40 CFR Part 763 subpart E. The Act indicates procedures for sampling and reporting of asbestos information (for public buildings) to the public, staff, and contractors working on buildings. Ronald R McDaniel (CAC 01-2865) conducted this inspection.

Adherence to NESHAP (National Emission Standard for Hazardous Air Pollutants) has been achieved with compliance to South Coast Air Quality Management District's Rule 1403. SCAQMD is the local air quality district that regulates and monitors asbestos abatement activity in the region of the these buildings.

Sampling Methodology – Asbestos:

Cardinal Environmental Consultants Inc. used several procedures from visual assessments to tactile assessments and a modified random sampling protocol to collect the samples of the suspect asbestos containing material. Cardinal's sampling procedures incorporate the use of plastic Ziploc bags, labeled with black permanent markers per a unique numbering sequence. One label with the suspect samples collected for this report was given a unique sample identification number. A second description was placed on the bulk sample log. Information about the sample, including the sample type and location was noted on the sheet as each sample was collected.

Asbestos: Any building material which contains asbestos in an amount greater than 1% by weight, area.

<1% Asbestos: Federal regulations and SCAQMD (South Coast Air Quality Management District) do not regulate asbestos at this percentage. Notifications to these agencies do not apply. However, OSHA regulations do apply. These are specific to "worker protection" issues. A contractor who is "DOSH certified" is required if removing more than a 100 square feet. Federal and State regulations do not regulate the disposal of this type of construction debris with this level of asbestos. However, your local landfill may have a "zero tolerance" for any asbestos containing debris.

Suspect Asbestos-Containing Materials:

Samples of suspect Asbestos-containing materials were taken throughout the interior and exterior of the buildings. We were able to collect representative samples of all the building materials.

The following materials were tested:

- Stucco
- Drywall
- Joint compound
- Roofing
- Roofing mastic
- Tackboard mastic
- Plaster
- 2x2 ceiling tile
- 2x4 ceiling tile
- Cove base
- Linoleum
- Lab tables
- Window putty
- Acoustic ceiling
- 1x1 ceiling
- Yellow glue (under carpet)

ACM Survey

Results:

All samples were packaged and shipped to EmLab P&K, LLC (NVLAP 200757-0) 2841 Dow Avenue, Suite 300, Tustin, CA 92780 (866) 465-6653. The analysis procedure used to determine the presence of asbestos is outlined in the Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A, Polarized Light Microscopy.

The following tables depict the asbestos at the sites. The investigator has reviewed the results and construction of the buildings and made adjustments to the locations and the quantities based on "homogeneous areas." AHERA can require that like areas in type, construction, and use (that test positive for asbestos) be combined with other similar areas. Therefore, some areas may not be specifically tested for asbestos but be included in an area of asbestos. Likewise, an area that has tested negative for asbestos could be included in the asbestos table because of the definition of "homogeneous area."

Subsequent tables in this document depict what was sampled and the outcome of each. Those subsequent tables should be used for clarification and not for quantification of asbestos.

Asbestos:

Building E		
Window Putty (glazing putty)	"E" Exterior	1,000 sf (at window systems)

Building H		
Roof penetrations	Roof of "H"	150sf

Building K		
Roof penetrations	Roof of "K"	150sf

Contractors are to base their bids on the quantities provided. The amount provided is an approximation.

Summary:

All materials listed in the table will need to be removed by a DOSH licensed abatement contractor prior to any demolition work being conducted.

E Notes:

The quantities are obscure. The quantity is based on the square feet of the window systems.

K & H Notes:

The roof penetration mastic is found on corners of fans and Hvac units. Additionally, at all penetrations through the roof.

AQM Survey

Contractors are obligated to review the scope of work when determining the asbestos removal quantities. The table lists all of the asbestos in the building, not the removal quantities. The contractor should review the plans to determine the exact removals.

Although we aggressively searched for asbestos, the contractor should be made aware of the potential of uncovering asbestos during demolition. A supervisor trained in identifying asbestos should be present at the beginning of demolition.

November 20th, 2024
Revised 1/13/2025

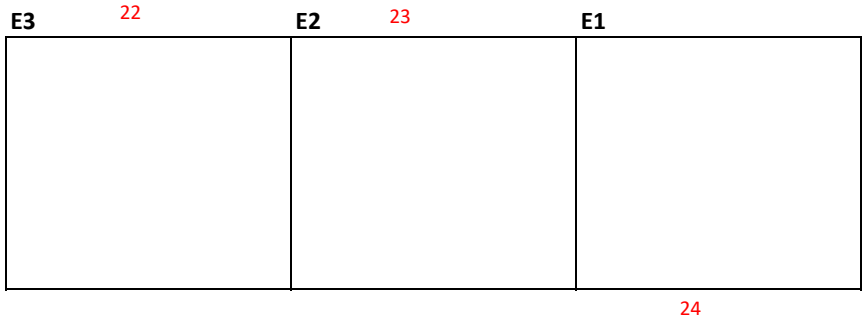
Sincerely yours,
CARDINAL ENVIRONMENTAL CONSULTANTS INC.,
A California Corporation

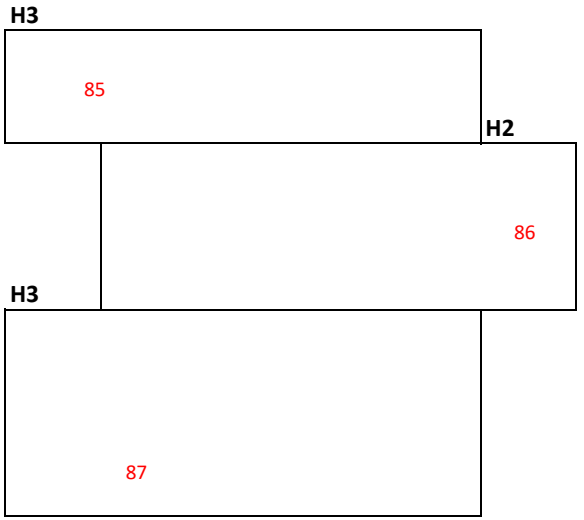
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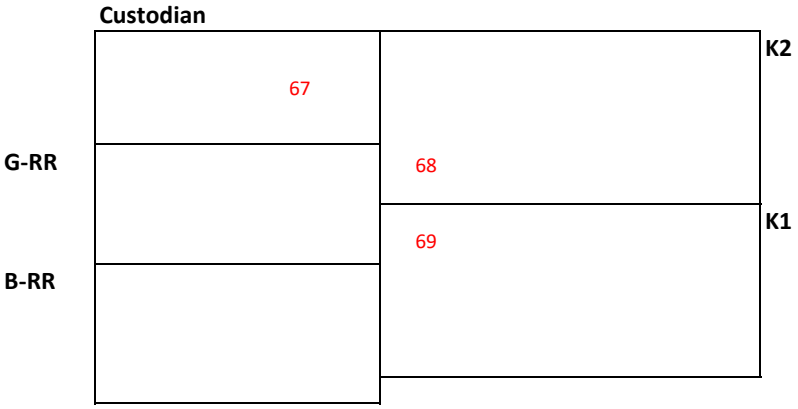
Ronald R. McDaniel
California Certified Asbestos Consultant #01-2865(Expiration 03-09-25)
CDPH Certified Lead Inspector/Assessor and Project Monitor/Designer #3599

ACM Survey

Diagram(s)


E3
22
E2
23
E1
24


H3
85
H2
86
H3
87


Custodian
67
K2
G-RR
68
K1
69
B-RR

Sampling Table

Asbestos Sampling Data

Cardinal Environmental Consultants Inc.

Revised 1/13/2024

Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings E1,2,3	Stucco	CMS-01	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings E1,2,3	Stucco	CMS-02	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings E1,2,3	Stucco	CMS-03	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings E1,2,3	2x2 Ceiling Tile	CMS-04	ND	Good	Low	NF	Interior Ceiling
Buildings E1,2,3	2x2 Ceiling Tile	CMS-05	ND	Good	Low	NF	Interior Ceiling
Buildings E1,2,3	2x2 Ceiling Tile	CMS-06	ND	Good	Low	NF	Interior Ceiling
Buildings E1,2,3	Cove Base & Glue	CMS-07	ND	Good	N/A	NF	Interior Floor Base
Buildings E1,2,3	Cove Base & Glue	CMS-08	ND	Good	N/A	NF	Interior Floor Base
Buildings E1,2,3	Cove Base & Glue	CMS-09	ND	Good	N/A	NF	Interior Floor Base
Buildings E1 & E2 Storage	Linoleum Floor	CMS-10	ND	Good	N/A	NF	Interior Floor
Buildings E1 & E2 Storage	Linoleum Floor	CMS-11	ND	Good	N/A	NF	Interior Floor
Buildings E1 & E2 Storage	Linoleum Floor	CMS-12	ND	Good	N/A	NF	Interior Floor
Buildings E1,2,3	Roof Penetrations	CMS-13	ND	Good	N/A	NF	Roofing
Buildings E1,2,3	Roof Penetrations	CMS-14	ND	Good	N/A	NF	Roofing
Buildings E1,2,3	Roof Penetrations	CMS-15	ND	Good	N/A	NF	Roofing
Buildings E1,2,3	Roofing	CMS-16	ND	Good	N/A	NF	Roofing

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Revised 1/13/2024

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Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings E1,2,3	Roofing	CMS-17	ND	Good	N/A	NF	Roofing
Buildings E1,2,3	Roofing	CMS-18	ND	Good	N/A	NF	Roofing
Buildings E1,2,3	Composite Material	CMS-19	ND	Good	N/A	NF	Lab Tables
Buildings E1,2,3	Composite Material	CMS-20	ND	Good	N/A	NF	Lab Tables
Buildings E1,2,3	Composite Material	CMS-21	ND	Good	N/A	NF	Lab Tables
Buildings E1,2,3	Window Putty	CMS-22	2% Chrysotile	Good	N/A	NF	Window System
Buildings E1,2,3	Window Putty	CMS-23	2% Chrysotile	Good	N/A	NF	Window System
Buildings E1,2,3	Window Putty	CMS-24	2% Chrysotile	Good	N/A	NF	Window System
Buildings E1,2,3	Joint Compound	CMS-25	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Joint Compound	CMS-26	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Joint Compound	CMS-27	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Drywall	CMS-28	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Drywall	CMS-29	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Drywall	CMS-30	ND	Good	N/A	NF	Interior Wall
Buildings E1,2,3	Tackboard	CMS-31	ND	Good	N/A	NF	Board on Wall
Buildings E1,2,3	Tackboard	CMS-32	ND	Good	N/A	NF	Board on Wall

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Revised 1/13/2024

Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings E1,2,3	Tackboard	CMS-33	ND	Good	N/A	NF	Board on Wall
Buildings E1,2,3	Acoustic	CMS-34	ND	Good	N/A	NF	Interior Ceilings
Buildings E1,2,3	Acoustic	CMS-35	ND	Good	N/A	NF	Interior Ceilings
Buildings E1,2,3	Acoustic	CMS-36	ND	Good	N/A	NF	Interior Ceilings
Buildings K1-2 Storage	Cove Base & Glue	CMS-37	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2 Storage	Cove Base & Glue	CMS-38	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2 Storage	Cove Base & Glue	CMS-39	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2	Cove Base & Glue	CMS-40	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2	Cove Base & Glue	CMS-41	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2	Cove Base & Glue	CMS-42	ND	Good	N/A	NF	Interior Floor Base
Buildings K1-2	Composite Material	CMS-43	ND	Good	N/A	NF	Lab Tables
Buildings K1-2	Composite Material	CMS-44	ND	Good	N/A	NF	Lab Tables
Buildings K1-2	Composite Material	CMS-45	ND	Good	N/A	NF	Lab Tables
Buildings K Storage	2x2 Ceiling Tile	CMS-46	ND	Good	N/A	NF	Ceilings
Buildings K Storage	2x2 Ceiling Tile	CMS-47	ND	Good	N/A	NF	Ceilings
Buildings K Storage	2x2 Ceiling Tile	CMS-48	ND	Good	N/A	NF	Ceilings

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Revised 1/13/2024

Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings K1-2	Window Putty	CMS-49	<1% point count <.1%	Good	Low	F	Window System
Buildings K1-2	Window Putty	CMS-50	<1% point count <.1%	Good	Low	F	Window System
Buildings K1-2	Window Putty	CMS-51	<1% point count <.1%	Good	Low	F	Window System
Buildings K1-2	Stucco	CMS-52	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings K1-2	Stucco	CMS-53	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings K1-2	Stucco	CMS-54	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings K1-2	1x1 Ceiling Tile	CMS-55	ND	Good	N/A	NF	Ceilings
Buildings K1-2	1x1 Ceiling Tile	CMS-56	ND	Good	N/A	NF	Ceilings
Buildings K1-2	1x1 Ceiling Tile	CMS-57	ND	Good	N/A	NF	Ceilings
Buildings K1-2	Drywall	CMS-58	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Drywall	CMS-59	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Drywall	CMS-60	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Joint Compound	CMS-61	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Joint Compound	CMS-62	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Joint Compound	CMS-63	ND	Good	N/A	NF	Interior Wall
Buildings K1-2	Roofing	CMS-64	ND	Good	N/A	NF	Roofing

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Revised 1/13/2024

Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings K1-2	Roofing	CMS-65	ND	Good	N/A	NF	Roofing
Buildings K1-2	Roofing	CMS-66	ND	Good	N/A	NF	Roofing
Buildings K1-2	Roof Penetrations	CMS-67	5% Chrysotile	Good	N/A	NF	Roofing
Buildings K1-2	Roof Penetrations	CMS-68	5% Chrysotile	Good	N/A	NF	Roofing
Buildings K1-2	Roof Penetrations	CMS-69	5% Chrysotile	Good	N/A	NF	Roofing
Buildings H1,2,3	1x1 Ceiling Tile	CMS-70	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-71	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-72	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	2x2 Ceiling Tile	CMS-73	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	2x2 Ceiling Tile	CMS-74	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	2x2 Ceiling Tile	CMS-75	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-76	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-77	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-78	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-79	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	1x1 Ceiling Tile	CMS-80	ND	Good	N/A	NF	Ceilings

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Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Buildings H1,2,3	1x1 Ceiling Tile	CMS-81	ND	Good	N/A	NF	Ceilings
Buildings H1,2,3	Roofing	CMS-82	ND	Good	N/A	NF	Roofing
Buildings H1,2,3	Roofing	CMS-83	ND	Good	N/A	NF	Roofing
Buildings H1,2,3	Roofing	CMS-84	ND	Good	N/A	NF	Roofing
Buildings H1,2,3	Roofing Penetration	CMS-85	5% Chrysotile	Good	N/A	NF	Roofing
Buildings H1,2,3	Roofing Penetration	CMS-86	5% Chrysotile	Good	N/A	NF	Roofing
Buildings H1,2,3	Roofing Penetration	CMS-87	5% Chrysotile	Good	N/A	NF	Roofing
Buildings H1,2,3	Cove Base & Glue	CMS-88	ND	Good	Low	NF	Interior Floor Base
Buildings H1,2,3	Cove Base & Glue	CMS-89	ND	Good	Low	NF	Interior Floor Base
Buildings H1,2,3	Cove Base & Glue	CMS-90	ND	Good	Low	NF	Interior Floor Base
Buildings H1,2,3	Stucco	CMS-91	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings H1,2,3	Stucco	CMS-92	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings H1,2,3	Stucco	CMS-93	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Buildings H1,2,3	Plaster	CMS-94	ND	Good	N/A	NF	Interior Wall
Buildings H1,2,3	Plaster	CMS-95	ND	Good	N/A	NF	Interior Wall
Buildings H1,2,3	Plaster	CMS-96	ND	Good	N/A	NF	Interior Wall

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Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Building H1	Yellow Glue Under Carpet	CMS-97	ND	Good	N/A	NF	Interior Floor
Building H1	Yellow Glue Under Carpet	CMS-98	ND	Good	N/A	NF	Interior Floor
Building H1	Yellow Glue Under Carpet	CMS-99	ND	Good	N/A	NF	Interior Floor
Building H2	Linoleum Floor	CMS-100	ND	Good	N/A	NF	Interior Floor
Building H2	Linoleum Floor	CMS-101	ND	Good	N/A	NF	Interior Floor
Building H2	Linoleum Floor	CMS-102	ND	Good	N/A	NF	Interior Floor
Buildings H1,2,3	Window Putty	CMS-103	<1% point count <.1%	Good	N/A	NF	Window System
Buildings H1,2,3	Window Putty	CMS-104	<1% point count <.1%	Good	N/A	NF	Window System
Buildings H1,2,3	Window Putty	CMS-105	<1% point count <.1%	Good	N/A	NF	Window System
Restrooms K	Drywall	CTM-01	ND	Good	N/A	F	Boys Restrooms
Restrooms K	Drywall	CTM-02	ND	Good	N/A	F	Boys Restrooms
Restrooms K	Drywall	CTM-03	ND	Good	N/A	F	Boys Restrooms
Restrooms K	Joint Compound	CTM-04	ND	Good	N/A	F	Boys Restrooms
Restrooms K	Joint Compound	CTM-5	ND	Good	N/A	F	Boys Restrooms
Restrooms K	Joint Compound	CTM-06	ND	Good	N/A	F	Boys Restrooms

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Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Restrooms K	Stucco	CTM-07	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Restrooms K	Stucco	CTM-08	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Restrooms K	Stucco	CTM-09	<1% point count <.1%	Good	N/A	NF	Exterior Wall
Restrooms K	Roof Penetrations	CTM-10	ND	Good	N/A	NF	Roof
Restrooms K	Roof Penetrations	CTM-11	ND	Good	N/A	NF	Roof
Restrooms K	Roof Penetrations	CTM-12	ND	Good	N/A	NF	Roof
Restrooms K	Roofing	CTM-13	ND	Good	N/A	NF	Roof
Restrooms K	Roofing	CTM-14	ND	Good	N/A	NF	Roof
Restrooms K	Roofing	CTM-15	ND	Good	N/A	NF	Roof
Restrooms K	Drywall	CTM-16	ND	Good	N/A	F	Girls Restroom
Restrooms K	Drywall	CTM-17	ND	Good	N/A	F	Girls Restroom
Restrooms K	Drywall	CTM-18	ND	Good	N/A	F	Girls Restroom
Restrooms K	Joint Compound	CTM-19	ND	Good	N/A	F	Girls Restroom
Restrooms K	Joint Compound	CTM-20	ND	Good	N/A	F	Girls Restroom
Restrooms K	Joint Compound	CTM-21	ND	Good	N/A	F	Girls Restroom
Restrooms K	Tackboard	CTM-22	ND	Good	N/A	NF	Storage

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17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Restrooms K	Tackboard	CTM-23	ND	Good	N/A	NF	Storage
Restrooms K	Tackboard	CTM-24	ND	Good	N/A	NF	Storage
Restrooms K	Plaster	CTM-25	ND	Good	N/A	NF	Storage
Restrooms K	Plaster	CTM-26	ND	Good	N/A	NF	Storage
Restrooms K	Plaster	CTM-27	ND	Good	N/A	NF	Storage
Secondary Roof Samples							
Admin/Office	Roofing	CTMS-01	ND	Good	N/A	NF	Roof
Admin/Office	Roofing	CTMS-02	ND	Good	N/A	NF	Roof
Admin/Office	Roofing	CTMS-03	ND	Good	N/A	NF	Roof
Admin/Office	Penetration Matsic	CTMS-04	ND	Good	N/A	NF	Roof
Admin/Office	Penetration Matsic	CTMS-05	ND	Good	N/A	NF	Roof
Admin/Office	Penetration Matsic	CTMS-06	ND	Good	N/A	NF	Roof
MPR	Roofing	CTMS-07	ND	Good	N/A	NF	Roof
MPR	Roofing		ND	Good	N/A	NF	Roof
MPR	Roofing	CTMS-09	ND	Good	N/A	NF	Roof
MPR	Penetration Matsic	CTMS-10	ND	Good	N/A	NF	Roof

ND- No Asbestos Detected
NF- Non-Friable
F- Friable

Revised 1/13/2024

Date: November 20th, 2024

Client: Tustin USD

Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
MPR	Penetration Matsic	CTMS-11	ND	Good	N/A	NF	Roof
MPR	Penetration Matsic	CTMS-12	ND	Good	N/A	NF	Roof
Mechanical Room	Roofing	CTMS-13	ND	Good	N/A	NF	Roof
Mechanical Room	Roofing	CTMS-14	ND	Good	N/A	NF	Roof
Mechanical Room	Roofing	CTMS-15	ND	Good	N/A	NF	Roof
Mechanical Room	Penetration Matsic	CTMS-16	ND	Good	N/A	NF	Roof
Mechanical Room	Penetration Matsic	CTMS-17	ND	Good	N/A	NF	Roof
Mechanical Room	Penetration Matsic	CTMS-18	ND	Good	N/A	NF	Roof
Building B	Roofing	CTMS-19	ND	Good	N/A	NF	Roof
Building B	Roofing	CTMS-20	ND	Good	N/A	NF	Roof
Building B	Roofing	CTMS-21	ND	Good	N/A	NF	Roof
Building B	Penetration Matsic	CTMS-22	ND	Good	N/A	NF	Roof
Building B	Penetration Matsic	CTMS-23	ND	Good	N/A	NF	Roof
Building B	Penetration Matsic	CTMS-24	ND	Good	N/A	NF	Roof
Building B	Fiborus Roofing Material	CTMS-25	ND	Good	N/A	NF	Roof
Building B	Fiborus Roofing Material	CTMS-26	ND	Good	N/A	NF	Roof

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F- Friable

Revised 1/13/2024

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Location: Columbus Tustin MS
17952 Beneta Way
Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Building B	Fiborus Roofing Material	CTMS-27	ND	Good	N/A	NF	Roof
Building C	Roofing	CTMS-28	ND	Good	N/A	NF	Roof
Building C	Roofing	CTMS-29	ND	Good	N/A	NF	Roof
Building C	Roofing	CTMS-30	ND	Good	N/A	NF	Roof
Building C	Penetration Matsic	CTMS-31	ND	Good	N/A	NF	Roof
Building C	Penetration Matsic	CTMS-32	ND	Good	N/A	NF	Roof
Building C	Penetration Matsic	CTMS-33	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Roofing	CTMS-34	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Roofing	CTMS-35	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Roofing	CTMS-36	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Penetration Matsic	CTMS-37	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Penetration Matsic	CTMS-38	ND	Good	N/A	NF	Roof
Building D0-07 & O2	Penetration Matsic	CTMS-39	ND	Good	N/A	NF	Roof
Building E	Penetration Matsic	CTMS-40	ND	Good	N/A	NF	Roof
Building E	Penetration Matsic	CTMS-41	ND	Good	N/A	NF	Roof
Building E	Penetration Matsic	CTMS-42	ND	Good	N/A	NF	Roof

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Revised 1/13/2024

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Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Building F	Roofing	CTMS-43	ND	Good	N/A	NF	Roof
Building F	Roofing	CTMS-44	ND	Good	N/A	NF	Roof
Building F	Roofing	CTMS-45	ND	Good	N/A	NF	Roof
Building F	Penetration Matsic	CTMS-46	ND	Good	N/A	NF	Roof
Building F	Penetration Matsic	CTMS-47	ND	Good	N/A	NF	Roof
Building F	Penetration Matsic	CTMS-48	ND	Good	N/A	NF	Roof
Building G	Roofing	CTMS-49	ND	Good	N/A	NF	Roof
Building G	Roofing	CTMS-50	ND	Good	N/A	NF	Roof
Building G	Roofing	CTMS-51	ND	Good	N/A	NF	Roof
Building G	Penetration Matsic	CTMS-52	ND	Good	N/A	NF	Roof
Building G	Penetration Matsic	CTMS-53	ND	Good	N/A	NF	Roof
Building G	Penetration Matsic	CTMS-54	ND	Good	N/A	NF	Roof
Building I	Roofing	CTMS-55	ND	Good	N/A	NF	Roof
Building I	Roofing	CTMS-56	ND	Good	N/A	NF	Roof
Building I	Roofing	CTMS-57	ND	Good	N/A	NF	Roof
Building I	Penetration Matsic	CTMS-58	ND	Good	N/A	NF	Roof

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F- Friable

Revised 1/13/2024

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Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Building I	Penetration Matsic	CTMS-59	ND	Good	N/A	NF	Roof
Building I	Penetration Matsic	CTMS-60	ND	Good	N/A	NF	Roof
Building J	Roofing	CTMS-61	ND	Good	N/A	NF	Roof
Building J	Roofing	CTMS-62	ND	Good	N/A	NF	Roof
Building J	Roofing	CTMS-63	ND	Good	N/A	NF	Roof
Building J	Penetration Matsic	CTMS-64	ND	Good	N/A	NF	Roof
Building J	Penetration Matsic	CTMS-65	ND	Good	N/A	NF	Roof
Building J	Penetration Matsic	CTMS-66	ND	Good	N/A	NF	Roof
Building L	Roofing	CTMS-67	ND	Good	N/A	NF	Roof
Building L	Roofing	CTMS-68	ND	Good	N/A	NF	Roof
Building L	Roofing	CTMS-69	ND	Good	N/A	NF	Roof
Building L	Penetration Matsic	CTMS-70	ND	Good	N/A	NF	Roof
Building L	Penetration Matsic	CTMS-71	ND	Good	N/A	NF	Roof
Building L	Penetration Matsic	CTMS-72	ND	Good	N/A	NF	Roof
Canopies	Roofing	CTMS-73	ND	Good	N/A	NF	Roof
Canopies	Roofing	CTMS-74	ND	Good	N/A	NF	Roof

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F- Friable

Revised 1/13/2024

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Tustin, CA 92780

Technician: Ronald McDaniel

Analysis Type: Polarized Light Microscopy *Code of Federal Regulations 40 CFR part 763, Section 1, Appendix A*

Building #	Material	Sample #	Results	Condition	Hazard Rating	F/NF	Sample Location
Canopies	Roofing	CTMS-75	ND	Good	N/A	NF	Roof
Canopies	Penetration Matsic	CTMS-76	ND	Good	N/A	NF	Roof
Canopies	Penetration Matsic	CTMS-77	ND	Good	N/A	NF	Roof
Canopies	Penetration Matsic	CTMS-78	ND	Good	N/A	NF	Roof

ND- No Asbestos Detected
NF- Non-Friable
F- Friable

Laboratory Results

eurofins | Built Environment Testing

Report for:

Kade McDaniel
Cardinal Environmental
2681 Dow Avenue Ste. C1
Tustin, CA 92780

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: Columbus Middle School; 17952 Beneta Way, Tustin, CA
EML ID: 3859353

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 11-21-2024

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 EPK Built Environment Testing, 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 EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Total Samples Submitted:	105
Total Samples Analyzed:	105
Total Samples with Layer Asbestos Content > 1%:	9

Location: CMS-01, "E" Building Exterior, Stucco Lab ID-Version‡: 19096007-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-02, "E" Building Exterior, Stucco Lab ID-Version‡: 19096008-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	< 1% Chrysotile
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-03, "E" Building Exterior, Stucco Lab ID-Version‡: 19096009-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-04, "E" Building Interior, 2x2 Ceiling Lab ID-Version‡: 19096010-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

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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".

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Date of Receipt: 11-20-2024
Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Location: CMS-05, "E" Building Interior, 2x2 Ceiling

Lab ID-Version‡: 19096011-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

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Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Location: CMS-06, "E" Building Interior, 2x2 Ceiling Lab ID-Version‡: 19096012-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-07, "E'" Building Interior, Cove Base with Glue Lab ID-Version‡: 19096013-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Glue	ND
White Drywall	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-08, "E'" Building Interior, Cove Base with Glue Lab ID-Version‡: 19096014-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Glue	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-09, "E'" Building Interior, Cove Base with Glue Lab ID-Version‡: 19096015-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Glue	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-10, E-2, E-3, Stoprage, Linoleum Floor Lab ID-Version‡: 19096016-1

Sample Layers	Asbestos Content
Gray Linoleum	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: CMS-11, E-2, E-3, Stoprage, Linoleum Floor Lab ID-Version‡: 19096017-1

Sample Layers	Asbestos Content
Gray Linoleum	ND
Yellow Mastic	ND
Gray Cementitious Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-12, E-2, E-3, Stoprage, Linoleum Floor Lab ID-Version‡: 19096018-1

Sample Layers	Asbestos Content
Gray Linoleum	ND
Yellow Mastic	ND
Sample Composite Homogeneity:	Good

Location: CMS-13, Roofing, "E" Bldg, Roof Penetration Lab ID-Version‡: 19096019-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-14, Roofing, "E" Bldg, Roof Penetration

Lab ID-Version‡: 19096020-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CMS-15, Roofing, "E" Bldg, Roof Penetration

Lab ID-Version‡: 19096021-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CMS-16, Roofing, "E" Bldg, Roof

Lab ID-Version‡: 19096022-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-17, Roofing, "E" Bldg, Roof

Lab ID-Version‡: 19096023-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-18, Roofing, "E" Bldg, Roof Lab ID-Version‡: 19096024-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-19, "E" Bldg Interior, Lab-Table Lab ID-Version‡: 19096025-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-20, "E" Bldg Interior, Lab-Table Lab ID-Version‡: 19096026-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-21, "E" Bldg Interior, Lab-Table Lab ID-Version‡: 19096027-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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Date of Receipt: 11-20-2024
Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Location: CMS-22, "E" Bldg Exterior, Window Putty Lab ID-Version‡: 19096028-1

Sample Layers	Asbestos Content
Gray Window Putty	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-23, "E" Bldg Exterior, Window Putty Lab ID-Version‡: 19096029-1

Sample Layers	Asbestos Content
Gray Window Putty	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-24, "E" Bldg Exterior, Window Putty Lab ID-Version‡: 19096030-1

Sample Layers	Asbestos Content
Gray Window Putty	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-25, "E' Building, E-3, Joint Compound Lab ID-Version‡: 19096031-1

Sample Layers	Asbestos Content
White Joint Compound 1	ND
Cream Tape	ND
White Joint Compound 2	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Location: CMS-26, "E' Building, E-3, Joint Compound Lab ID-Version‡: 19096032-1

Sample Layers	Asbestos Content
White Joint Compound with Paint	ND
Cream Tape	ND
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CMS-27, "E' Building, E-3, Joint Compound Lab ID-Version‡: 19096033-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CMS-28, "E", Building , E-3, Drywall Lab ID-Version‡: 19096034-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-29, "E", Building , E-3, Drywall Lab ID-Version‡: 19096035-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-30, "E", Building , E-3, Drywall Lab ID-Version‡: 19096036-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-31, "E" Building, E-3, Task Board Lab ID-Version‡: 19096037-1

Sample Layers	Asbestos Content
Brown Fiberboard	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-32, "E" Building, E-3, Task Board Lab ID-Version‡: 19096038-1

Sample Layers	Asbestos Content
Brown Fiberboard	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-33, "E" Building, E-3, Task Board Lab ID-Version‡: 19096039-1

Sample Layers	Asbestos Content
Brown Fiberboard	ND
Composite Non-Asbestos Content:	90% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-34, "E' Building, E-3, Acoustic Ceiling Lab ID-Version‡: 19096040-1

Sample Layers	Asbestos Content
White Acoustic Ceiling Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-35, "E' Building, E-3, Acoustic Ceiling Lab ID-Version‡: 19096041-1

Sample Layers	Asbestos Content
White Acoustic Ceiling Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-36, "E' Building, E-3, Acoustic Ceiling Lab ID-Version‡: 19096042-1

Sample Layers	Asbestos Content
White Acoustic Ceiling Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-37, "K" Building, Storage Room, Cove Base and Glue Lab ID-Version‡: 19096043-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Brown Glue	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-38, "K" Building, Storage Room, Cove Base and Glue Lab ID-Version‡: 19096044-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Brown Glue	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-39, "K" Building, Storage Room, Cove Base and Glue Lab ID-Version‡: 19096045-1

Sample Layers	Asbestos Content
Gray Baseboard	ND
Brown Glue	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-40, "K" Bldg Classroom, Cove Base and Glue Lab ID-Version‡: 19096046-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-41, "K" Bldg Classroom, Cove Base and Glue Lab ID-Version‡: 19096047-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-42, "K" Bldg Classroom, Cove Base and Glue Lab ID-Version‡: 19096048-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Yellow Glue	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-43, "K" Bldg Classroom, Lab-Table Lab ID-Version‡: 19096049-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-44, "K" Bldg Classroom, Lab-Table Lab ID-Version‡: 19096050-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: CMS-45, "K" Bldg Classroom, Lab-Table Lab ID-Version‡: 19096051-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-46, "K" Building, Storage Room, 2x2 Ceiling Lab ID-Version‡: 19096052-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-47, "K" Building, Storage Room, 2x2 Ceiling Lab ID-Version‡: 19096053-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-48, "K" Building, Storage Room, 2x2 Ceiling Lab ID-Version‡: 19096054-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 40% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-49, "K" Bldg Classroom, Window Putty Lab ID-Version‡: 19096055-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-50, "K" Bldg Classroom, Window Putty Lab ID-Version‡: 19096056-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-51, "K" Bldg Classroom, Window Putty Lab ID-Version‡: 19096057-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-52, "K" Bldg Exterior, Stucco Lab ID-Version‡: 19096058-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-53, "K" Bldg Exterior, Stucco Lab ID-Version‡: 19096059-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-54, "K" Bldg Exterior, Stucco Lab ID-Version‡: 19096060-1

Sample Layers	Asbestos Content
Beige Stucco	< 1% Chrysotile
Gray Stucco	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-55, "K" Bldg Interior, 1x1 Ceiling Lab ID-Version‡: 19096061-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	95% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-56, "K" Bldg Interior, 1x1 Ceiling Lab ID-Version‡: 19096062-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	95% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-57, "K" Bldg Interior, 1x1 Ceiling Lab ID-Version‡: 19096063-1

Sample Layers	Asbestos Content
Brown Ceiling Tile with White Surface	ND
Composite Non-Asbestos Content:	95% Cellulose
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-58, "K" Bldg Interior, Drywall Lab ID-Version‡: 19096064-1

Sample Layers	Asbestos Content
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-59, "K" Bldg Interior, Drywall Lab ID-Version‡: 19096065-1

Sample Layers	Asbestos Content
White Drywall	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-60, "K" Bldg Interior, Drywall Lab ID-Version‡: 19096066-1

Sample Layers	Asbestos Content
Cream Adhesive	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Good

Location: CMS-61, "K" Bldg Interior, Joint Compound Lab ID-Version‡: 19096067-1

Sample Layers	Asbestos Content
Beige Joint Compound	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-62, "K" Bldg Interior, Joint Compound Lab ID-Version‡: 19096068-1

Sample Layers	Asbestos Content
Beige Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CMS-63, "K" Bldg Interior, Joint Compound Lab ID-Version‡: 19096069-1

Sample Layers	Asbestos Content
Beige Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CMS-64, "K" Bldg Roof, Roofing Lab ID-Version‡: 19096070-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Peach Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-65, "K" Bldg Roof, Roofing

Lab ID-Version‡: 19096071-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Peach Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-66, "K" Bldg Roof, Roofing

Lab ID-Version‡: 19096072-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Peach Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-67, "K" Bldg Roof, Roofing Penetration

Lab ID-Version‡: 19096073-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-68, "K" Bldg Roof, Roofing Penetration

Lab ID-Version‡: 19096074-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-69, "K" Bldg Roof, Roofing Penetration

Lab ID-Version‡: 19096075-1

Sample Layers	Asbestos Content
Gray/Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-70, "H" Bldg H-1 Room, 1x1 Ceiling Lab ID-Version‡: 19096076-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-71, "H" Bldg H-1 Room, 1x1 Ceiling Lab ID-Version‡: 19096077-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-72, "H" Bldg H-1 Room, 1x1 Ceiling Lab ID-Version‡: 19096078-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-73, "H" Bldg, H-1 Room, 2x2 Ceiling Lab ID-Version‡: 19096079-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

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(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-21-2024

ASBESTOS PLM REPORT

Location: CMS-74, "H" Bldg, H-1 Room, 2x2 Ceiling Lab ID-Version‡: 19096080-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-75, "H" Bldg, H-1 Room, 2x2 Ceiling Lab ID-Version‡: 19096081-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-76, "H" Bldg, H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096082-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-77, "H" Bldg, H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096083-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-78, "H" Bldg, H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096084-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-79, "H" H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096085-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-80, "H" H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096086-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CMS-81, "H" H-2 Room, 1x1 Ceiling Lab ID-Version‡: 19096087-1

Sample Layers	Asbestos Content
White Ceiling Tile	ND
Composite Non-Asbestos Content:	40% Cellulose 35% Glass Fibers
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-82, "H" Building, Roof, Roofing Lab ID-Version‡: 19096088-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers 5% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-83, "H" Building, Roof, Roofing Lab ID-Version‡: 19096089-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers 5% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CMS-84, "H" Building, Roof, Roofing Lab ID-Version‡: 19096090-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Glass Fibers 5% Cellulose 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-85, "H" Building, Roof, Roofing Penetration

Lab ID-Version‡: 19096091-1

Sample Layers	Asbestos Content
Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-86, "H" Building, Roof, Roofing Penetration Lab ID-Version‡: 19096092-1

Sample Layers	Asbestos Content
Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-87, "H" Building, Roof, Roofing Penetration Lab ID-Version‡: 19096093-1

Sample Layers	Asbestos Content
Black Roofing Mastic	5% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-88, "H" Bldg Interior, Cove Base with Glue Lab ID-Version‡: 19096094-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Good

Location: CMS-89, "H" Bldg Interior, Cove Base with Glue Lab ID-Version‡: 19096095-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Mastic	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-90, "H" Bldg Interior, Cove Base with Glue Lab ID-Version‡: 19096096-1

Sample Layers	Asbestos Content
Black Baseboard	ND
Tan Mastic	ND
White Compound	ND
Sample Composite Homogeneity:	Good

Location: CMS-91, "H" Bldg Exterior, Stucco Lab ID-Version‡: 19096097-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-92, "H" Bldg Exterior, Stucco Lab ID-Version‡: 19096098-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

Location: CMS-93, "H" Bldg Exterior, Stucco Lab ID-Version‡: 19096099-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-94, "H" Bldg Interior, Plaster Lab ID-Version‡: 19096100-1

Sample Layers	Asbestos Content
Tan Plaster	ND
Sample Composite Homogeneity:	Good

Location: CMS-95, "H" Bldg Interior, Plaster Lab ID-Version‡: 19096101-1

Sample Layers	Asbestos Content
Tan Plaster	ND
Sample Composite Homogeneity:	Good

Location: CMS-96, "H" Bldg Interior, Plaster Lab ID-Version‡: 19096102-1

Sample Layers	Asbestos Content
Tan Plaster	ND
Sample Composite Homogeneity:	Good

Location: CMS-97, "H" Bldg H-1, Yellow Glue Under Carpet Lab ID-Version‡: 19096103-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT

Location: CMS-98, "H" Bldg H-1, Yellow Glue Under Carpet Lab ID-Version‡: 19096104-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: CMS-99, "H" Bldg H-1, Yellow Glue Under Carpet Lab ID-Version‡: 19096105-1

Sample Layers	Asbestos Content
Yellow Glue	ND
Sample Composite Homogeneity:	Good

Location: CMS-100, "H" Bldg H-2 Room, Linoleum Floor with Floating Lab ID-Version‡: 19096106-1

Sample Layers	Asbestos Content
Gray Linoleum Floor	ND
Yellow Mastic	ND
Gray Leveling Compound	ND
Off-White Compound	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-101, "H" Bldg H-2 Room, Linoleum Floor with Floating Lab ID-Version‡: 19096107-1

Sample Layers	Asbestos Content
Gray Linoleum Floor	ND
Yellow Mastic	ND
Gray Leveling Compound	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CMS-102, "H" Bldg H-2 Room, Linoleum Floor with Floating Lab ID-Version‡: 19096108-1

Sample Layers	Asbestos Content
Gray Linoleum Floor	ND
Yellow Mastic	ND
Gray Leveling Compound	ND
Sample Composite Homogeneity:	Moderate

Location: CMS-103, "H" Bldg, Window Putty Lab ID-Version‡: 19096109-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-104, "H" Bldg, Window Putty Lab ID-Version‡: 19096110-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: CMS-105, "H" Bldg, Window Putty Lab ID-Version‡: 19096111-1

Sample Layers	Asbestos Content
Gray Window Putty	< 1% Chrysotile
Sample Composite Homogeneity:	Good

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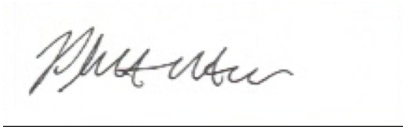
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ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Philip Newton

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Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Beneta Way, Tustin, CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:

RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:

PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS- 01	Bulk	"E" Building Exterior	stucco
02			
03			
04		"E" Building Interior	2x2 Ceiling
05			
06			
07			Cove base with glue
08			
09			
10		E-2, E-3, Storage	Linoleum Floor
11			
12			
13		Roofing, "E" Bldg.	Roof penetration
14			
15			
16		Roofing, "E" Bldg.	Roof
17			
18			
19		"E" Bldg. Interior	Lab - Table
20			
21			
22		"E" Bldg. Exterior	Window Putty
23			
24			

Relinquished By: Kade McDaniel
Received By: Johnfaney

Date Relinquished: 11/20/2024 ~~2pm~~ 4PM
Date Received: 11/20/24 11AM

Kade@cardinalenvironmental.org

Lab Report Number:	Chain Of Custody

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2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
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Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS - 25	Bulk	"E" building, E-3	Joint Compound
26			
27			
28			Drywall
29			
30			
31			Tack board
32			
33			
34			Accoustic ceiling
35			
36			
37		"K" Building, storage room	Cove base and glue
38			
39			
40		"K" Bldg. Classroom	Cove base and glue
41			
42			
43			Lab - Table
44			
45			
46		"K" Building, Storage room	2X2 Ceiling
47			
48			

Relinquished By: Kade McDaniel Date Relinquished: 11/20/2024 ~~2pm~~ 4PM
Received By: Johntang Date Received: 11/20/24 4pm

Kade@cardinalenvironmental.org

Lab Report Number:	Chain Of Custody

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Tustin, California 92780
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Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS- 49	Bulk	"K" Bldg. Classroom	Window Putty
50			
51			
52		"K" Bldg. Exterior	Stucco
53			
54			
55		"K" Bldg. Interior	1x1 Ceiling
56			
57			
58			Drywall
59			
60			
61			Joint Compound
62			
63			
64		"K" Bldg. Roof	Roofing
65			
66			
67			Roofing Penetration
68			
69			
70		"H" Bldg. H-1 Room	1x1 Ceiling
71			
~~72~~			
73		~~"H"~~ "L" Bldg, H-1 Room	2x2 Ceiling
74			
75			
76		"H" Bldg, H-2 Room	1x1 Ceiling.

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Kade@cardinalenvironmental.org

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Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Beneta Way, Tustin CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105



Turn Around Time:

RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:

PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS — 77	Bulk	"H" Bldg, H-2 Room	1X1 Ceiling
78			
79		H-3 Room	1X1 Ceiling
80			
81			
82		"H" Building, Roof	Roofing
83			
84			
85			Roofing Penetration
86			
87			
88		"H" Bldg. Interior	Cove base with glue
89			
90			
91		"H" Bldg. Exterior	Stucco
92			
93			
94		"H" Bldg. Interior	Plaster
95			
96			
97		"H" Bldg. H-1 Room	Yellow glue under carpet
98			
99			
100		"H" Bldg. H-2 Room	linoleum Floor with floating
101			
102			
103		"H" Bldg	Window Putty
104			
105			

Relinquished By: Kade McDaniel
Date Relinquished: 11/20/2024 ~~5pm~~ 4 PM
Received By: Johnfang
Date Received: 11/20/24 10am
Kade@cardinalenvironmental.org

eurofins | Built Environment Testing

Report for:

Kade McDaniel
Cardinal Environmental
2681 Dow Avenue Ste. C1
Tustin, CA 92780

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: Columbus Tustin Middle; 17952 Beneta Way, Tustin
EML ID: 3863936

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 11-26-2024

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 EPK Built Environment Testing, 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 EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Total Samples Submitted:	27
Total Samples Analyzed:	27
Total Samples with Layer Asbestos Content > 1%:	0

Location: CTM-01, Boy's Restroom- Drywall

Lab ID-Version‡: 19126334-1

Sample Layers	Asbestos Content
White Joint Compound 1	ND
Cream Tape	ND
White Joint Compound 2	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: CTM-02, Boy's Restroom- Drywall

Lab ID-Version‡: 19126339-1

Sample Layers	Asbestos Content
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	5% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CTM-03, Boy's Restroom- Drywall

Lab ID-Version‡: 19126340-1

Sample Layers	Asbestos Content
White Drywall	ND
Sample Composite Homogeneity:	Good

Location: CTM-04, Boy's Restroom- Joint Compound

Lab ID-Version‡: 19126341-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

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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".

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(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-05, Boy's Restroom- Joint Compound Lab ID-Version‡: 19126342-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CTM-06, Boy's Restroom- Joint Compound Lab ID-Version‡: 19126343-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CTM-07, Exterior Restroom- Stucco Lab ID-Version‡: 19126344-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Tan Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: CTM-08, Exterior Restroom- Stucco Lab ID-Version‡: 19126345-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Tan Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Good

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Eurofins EPK Built Environment Testing, LLC
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(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-09, Exterior Restroom- Stucco

Lab ID-Version‡: 19126346-1

Sample Layers	Asbestos Content
Gray Stucco	< 1% Chrysotile
Tan Stucco	< 1% Chrysotile
Sample Composite Homogeneity:	Good

Location: CTM-10, Roof- Roof Penetration Mastic

Lab ID-Version‡: 19126347-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Silver Paint	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: CTM-11, Roof- Roof Penetration Mastic

Lab ID-Version‡: 19126348-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Silver Paint	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

Location: CTM-12, Roof- Roof Penetration Mastic

Lab ID-Version‡: 19126349-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Silver Paint	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Good

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-13, Roof- Roof

Lab ID-Version‡: 19126350-1

Sample Layers	Asbestos Content
Black Roofing Shingle with White Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Black Roofing Tar and Felt 4	ND
Composite Non-Asbestos Content:	15% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: CTM-14, Roof- Roof

Lab ID-Version‡: 19126351-1

Sample Layers	Asbestos Content
Black Roofing Shingle with White Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Black Roofing Tar and Felt 4	ND
Composite Non-Asbestos Content:	15% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

Location: CTM-15, Roof- Roof

Lab ID-Version‡: 19126352-1

Sample Layers	Asbestos Content
Black Roofing Shingle with White Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Black Roofing Tar and Felt 4	ND
Composite Non-Asbestos Content:	15% Glass Fibers 10% Cellulose
Sample Composite Homogeneity:	Poor

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-16, Girl's Restroom- Drywall

Lab ID-Version‡: 19126353-1

Sample Layers	Asbestos Content
White Joint Compound	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	5% Cellulose 2% Glass Fibers
Sample Composite Homogeneity:	Moderate

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2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-17, Girl's Restroom- Drywall Lab ID-Version‡: 19126354-1

Sample Layers	Asbestos Content
White Drywall	ND
Sample Composite Homogeneity:	Good

Location: CTM-18, Girl's Restroom- Drywall Lab ID-Version‡: 19126355-1

Sample Layers	Asbestos Content
Off-White Joint Compound 1	ND
Cream Tape	ND
Off-White Joint Compound 2	ND
White Drywall with Brown Paper	ND
Composite Non-Asbestos Content:	10% Cellulose
Sample Composite Homogeneity:	Poor

Location: CTM-19, Girl's Restroom- Joint Compound Lab ID-Version‡: 19126356-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CTM-20, Girl's Restroom- Joint Compound Lab ID-Version‡: 19126357-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

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Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-21, Girl's Restroom- Joint Compound

Lab ID-Version‡: 19126358-1

Sample Layers	Asbestos Content
White Joint Compound	ND
Sample Composite Homogeneity:	Good

Location: CTM-22, Storage- Tack Board

Lab ID-Version‡: 19126359-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material (Tack Board)	ND
White Fibrous Material	ND
Composite Non-Asbestos Content:	15% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTM-23, Storage- Tack Board

Lab ID-Version‡: 19126360-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material (Tack Board)	ND
White Fibrous Material	ND
Composite Non-Asbestos Content:	15% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTM-24, Storage- Tack Board

Lab ID-Version‡: 19126361-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material (Tack Board)	ND
White Fibrous Material	ND
Composite Non-Asbestos Content:	15% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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Eurofins EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

Location: CTM-25, Storage- Plaster Lab ID-Version‡: 19126362-1

Sample Layers	Asbestos Content
White Plaster	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Moderate

Location: CTM-26, Storage- Plaster Lab ID-Version‡: 19126363-1

Sample Layers	Asbestos Content
White Plaster	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Moderate

Location: CTM-27, Storage- Plaster Lab ID-Version‡: 19126364-1

Sample Layers	Asbestos Content
White Plaster	ND
Gray Plaster	ND
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Tustin Middle; 17952 Beneta Way, Tustin

Date of Sampling: 11-25-2024
Date of Receipt: 11-25-2024
Date of Report: 11-26-2024

ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Miguel Diaz

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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".

003863936

Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Tustin Middle
Project Address:	17952 Beneta Way, Tustin
Sampling Technician:	Kade McDaniel
Samples Taken:	27

Turn Around Time:

RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour
		(24 Hour)			

Analysis Required:

PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis
(PLM)					

Sampling Information

Sample Number	Sample Type	Location	Material
CTM- 01	Bulk	Boy's Restroom	Drywall
02			
03			
04			Joint Compound
05			
06			
07		Exterior Restroom	Stucco
08			
09			
10		Roof	Roof Penetration Mastic
11			
12			
13			Roof
14			
15			
16		Girl's Restroom	Drywall
17			
18			
19			Joint Compound
20			
21			
22		Storage	Tack Board
23			
24			
25			Plaster
26			
27			

Relinquished By: Kade McDaniel — Date Relinquished: ~~11/20/2024 2pm~~ 11/25/24 - 12:30

Received By: Sohntang — Date Received: 11/25/24 12:35am

Kade@cardinalenvironmental.org

eurofins | Built Environment Testing

Report for:

Kade McDaniel
Cardinal Environmental
2681 Dow Avenue Ste. C1
Tustin, CA 92780

Regarding: Eurofins EPK Built Environment Testing, LLC
Project: Columbus Middle School; 17952 Beneta Way, Tustin, CA
EML ID: 3859353

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos-EPA 1000 point count: 11-27-2024

Service SOPs: Asbestos-EPA 1000 point count (EPA 40CFR App E to Sub E of Part 763 & EPA METHOD 600/R-93-116, SOP EB-AS-S-1262)
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. 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.

Eurofins EPK Built Environment Testing, 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 EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-01 "E" Building Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115696-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-02 "E" Building Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115697-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. 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.

All samples were received in acceptable condition unless otherwise noted. 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.
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.

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-03 "E" Building Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115698-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-49 "K" Bldg Classroom, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115699-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-50 "K" Bldg Classroom, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115700-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. 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.

All samples were received in acceptable condition unless otherwise noted. 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.
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 EPK Built Environment Testing, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-51 "K" Bldg Classroom, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115701-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	1	0.1
Layer Totals:		1	0.1

Location:	CMS-52 "K" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115702-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-53 "K" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115703-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-54 "K" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115704-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Beige Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-91 "H" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115705-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-92 "H" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115706-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-93 "H" Bldg Exterior, Stucco		
Total Points Counted:	1000		
Lab ID-Version‡:	19115707-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Stucco	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

Location:	CMS-103 "H" Bldg, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115708-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	1	0.1
Layer Totals:		1	0.1

Location:	CMS-104 "H" Bldg, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115709-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	0	< 0.1
Layer Totals:		0	NA

Comments: Asbestos was detected, but no points counted.

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Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

Location:	CMS-105 "H" Bldg, Window Putty		
Total Points Counted:	1000		
Lab ID-Version‡:	19115710-1		
Sample Layers	**Asbestos Type**	**Asbestos Points Counted**	**Asbestos Concentration (%)**
Gray Window Putty	Chrysotile	2	0.2
Layer Totals:		2	0.2

The analytical sensitivity is 1 asbestos point. The limit of detection is 1 asbestos point divided by the total number of points counted and multiplied by 100.

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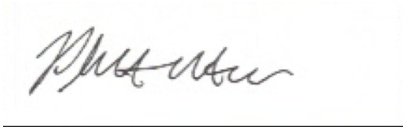
Client: Cardinal Environmental
C/O: Kade McDaniel
Re: Columbus Middle School; 17952 Beneta Way, Tustin, CA

Date of Receipt: 11-20-2024
Date of Report: 11-27-2024

ASBESTOS POINT COUNT REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Philip Newton

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Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Beneta Way, Tustin, CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:

RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:

PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS- 01	Bulk	"E" Building Exterior	stucco
02			
03			
04		"E" Building Interior	2x2 Ceiling
05			
06			
07			Cove base with glue
08			
09			
10		E-2, E-3, Storage	Linoleum Floor
11			
12			
13		Roofing, "E" Bldg.	Roof penetration
14			
15			
16		Roofing, "E" Bldg.	Roof
17			
18			
19		"E" Bldg. Interior	Lab - Table
20			
21			
22		"E" Bldg. Exterior	Window Putty
23			
24			

Relinquished By: Kade McDaniel
Received By: Johnfaney

Date Relinquished: 11/20/2024 ~~2pm~~ 4PM
Date Received: 11/20/24 11AM

Kade@cardinalenvironmental.org

Lab Report Number:	Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Beneta Way, Tustin CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS - 25	Bulk	"E" building, E-3	Joint Compound
26			
27			
28			Drywall
29			
30			
31			Tack board
32			
33			
34			Accoustic ceiling
35			
36			
37		"K" Building, storage room	Cove base and glue
38			
39			
40		"K" Bldg. Classroom	Cove base and glue
41			
42			
43			Lab - Table
44			
45			
46		"K" Building, Storage room	2X2 Ceiling
47			
48			

Relinquished By: Kade McDaniel Date Relinquished: 11/20/2024 ~~2pm~~ 4PM
Received By: Johntang Date Received: 11/20/24 4pm

Kade@cardinalenvironmental.org

Lab Report Number:	Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Bencta Way, Tustin CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105

003859353

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS- 49	Bulk	"K" Bldg. Classroom	Window Putty
50			
51			
52		"K" Bldg. Exterior	Stucco
53			
54			
55		"K" Bldg. Interior	1x1 Ceiling
56			
57			
58			Drywall
59			
60			
61			Joint Compound
62			
63			
64		"K" Bldg. Roof	Roofing
65			
66			
67			Roofing Penetration
68			
69			
70		"H" Bldg. H-1 Room	1x1 Ceiling
71			
~~72~~			
73		~~"H"~~ "L" Bldg, H-1 Room	2x2 Ceiling
74			
75			
76		"H" Bldg, H-2 Room	1x1 Ceiling.

Relinquished By: Kade McDaniel Date Relinquished: 11/20/2024 ~~2pm~~ 4PM
Received By: Johnkang Date Received: 11/20/24 4pm
Kade@cardinalenvironmental.org

Lab Report Number:	Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Middle School
Project Address:	17952 Beneta Way, Tustin CA
Sampling Technician:	Kade McDaniel
Samples Taken:	105



Turn Around Time:

RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:

PLM	PCM	TEM	1000 Point Count	Asbestos Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CMS — 77	Bulk	"H" Bldg, H-2 Room	1X1 Ceiling
78			
79		H-3 Room	1X1 Ceiling
80			
81			
82		"H" Building, Roof	Roofing
83			
84			
85			Roofing Penetration
86			
87			
88		"H" Bldg. Interior	Cove base with glue
89			
90			
91		"H" Bldg. Exterior	Stucco
92			
93			
94		"H" Bldg. Interior	Plaster
95			
96			
97		"H" Bldg. H-1 Room	Yellow glue under carpet
98			
99			
100		"H" Bldg. H-2 Room	linoleum Floor with floating
101			
102			
103		"H" Bldg	Window Putty
104			
105			

Relinquished By: Kade McDaniel
Date Relinquished: 11/20/2024 ~~5pm~~ 4 PM
Received By: Johnfang
Date Received: 11/20/24 10am
Kade@cardinalenvironmental.org

eurofins | Built Environment Testing

Report for:

Ron McDaniel
Cardinal Environmental
2681 Dow Avenue Ste. C1
Tustin, CA 92780

Regarding: Eurofins Built Environment Testing West, LLC
Project: Columbus Tustin MS; 17952 Beneta Way
EML ID: 3898817

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 01-02-2025

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 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
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Total Samples Submitted:	81
Total Samples Analyzed:	81
Total Samples with Layer Asbestos Content > 1%:	0

Location: CTMS-01, Admin/Office, Roofing

Lab ID-Version‡: 19325733-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-02, Admin/Office, Roofing

Lab ID-Version‡: 19325734-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-03, Admin/Office, Roofing

Lab ID-Version‡: 19325735-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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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.
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(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-04, Admin/Office, Penetration Mastic Lab ID-Version‡: 19325736-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-05, Admin/Office, Penetration Mastic Lab ID-Version‡: 19325737-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-06, Admin/Office, Penetration Mastic

Lab ID-Version‡: 19325738-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-07, MPR, Roofing

Lab ID-Version‡: 19325739-1

Sample Layers	Asbestos Content
White Coating	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-08, MPR, Roofing

Lab ID-Version‡: 19325740-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-09, MPR, Roofing

Lab ID-Version‡: 19325741-1

Sample Layers	Asbestos Content
White Coating	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-10, MPR, Penetration Mastic Lab ID-Version‡: 19325742-1

Sample Layers	Asbestos Content
White Coating	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-11, MPR, Penetration Mastic Lab ID-Version‡: 19325743-1

Sample Layers	Asbestos Content
White Coating	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-12, MPR, Penetration Mastic Lab ID-Version‡: 19325744-1

Sample Layers	Asbestos Content
White Coating	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-13, Mechanical Room, Roofing Lab ID-Version‡: 19325745-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
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Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-14, Mechanical Room, Roofing

Lab ID-Version‡: 19325746-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Synthetic Fibers 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-15, Mechanical Room, Roofing

Lab ID-Version‡: 19325747-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Synthetic Fibers 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-16, Mechanical Room, Penetration Mastic

Lab ID-Version‡: 19325748-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-17, Mechanical Room, Penetration Mastic

Lab ID-Version‡: 19325749-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-18, Mechanical Room, Penetration Mastic

Lab ID-Version‡: 19325750-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-19, Building B, Roofing

Lab ID-Version‡: 19325751-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	5% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-20, Building B, Roofing

Lab ID-Version‡: 19325752-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	15% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-21, Building B, Roofing

Lab ID-Version‡: 19325753-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	5% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-22, Building B, Penetration Mastic

Lab ID-Version‡: 19325754-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-23, Building B, Penetration Mastic

Lab ID-Version‡: 19325755-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-24, Building B, Penetration Mastic

Lab ID-Version‡: 19325756-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-25, Building B, Fibrous Roofing Material

Lab ID-Version‡: 19325757-1

Sample Layers	Asbestos Content
Brown Roofing Material	ND
Composite Non-Asbestos Content:	75% Cellulose
Sample Composite Homogeneity:	Moderate

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Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-26, Building B, Fibrous Roofing Material Lab ID-Version‡: 19325758-1

Sample Layers	Asbestos Content
Brown Roofing Material	ND
Composite Non-Asbestos Content:	75% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-27, Building B, Fibrous Roofing Material Lab ID-Version‡: 19325759-1

Sample Layers	Asbestos Content
Brown Roofing Material	ND
Composite Non-Asbestos Content:	75% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-28, Building C, Roofing Lab ID-Version‡: 19325760-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-29, Building C, Roofing Lab ID-Version‡: 19325761-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-30, Building C, Roofing Lab ID-Version‡: 19325762-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-31, Building C, Penetration Mastic Lab ID-Version‡: 19325763-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-32, Building C, Penetration Mastic Lab ID-Version‡: 19325764-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-33, Building C, Penetration Mastic Lab ID-Version‡: 19325765-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-34, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325766-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-35, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325767-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-36, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325768-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-37, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325769-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-38, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325770-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-39, Building D0-D7 and O2, Penetration Mastic Lab ID-Version‡: 19325771-1

Sample Layers	Asbestos Content
Gray Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-40, Building E, Penetration Mastic Lab ID-Version‡: 19325772-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-41, Building E, Penetration Mastic Lab ID-Version‡: 19325773-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-42, Building E, Penetration Mastic

Lab ID-Version‡: 19325774-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-43, Building F, Roofing

Lab ID-Version‡: 19325775-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	5% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-44, Building F, Roofing

Lab ID-Version‡: 19325776-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	5% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-45, Building F, Roofing

Lab ID-Version‡: 19325777-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	5% Glass Fibers 5% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-46, Building F, Penetration Mastic

Lab ID-Version‡: 19325778-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-47, Building F, Penetration Mastic

Lab ID-Version‡: 19325779-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-48, Building F, Penetration Mastic

Lab ID-Version‡: 19325780-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-49, Building G, Roofing

Lab ID-Version‡: 19325781-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-50, Building G, Roofing

Lab ID-Version‡: 19325782-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-51, Building G, Roofing

Lab ID-Version‡: 19325783-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	15% Cellulose 5% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-52, Building G, Penetration Mastic

Lab ID-Version‡: 19325784-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-53, Building G, Penetration Mastic

Lab ID-Version‡: 19325785-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

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ASBESTOS PLM REPORT

Location: CTMS-54, Building G, Penetration Mastic

Lab ID-Version‡: 19325786-1

Sample Layers	Asbestos Content
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-55, Building I, Roofing

Lab ID-Version‡: 19325787-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-56, Building I, Roofing

Lab ID-Version‡: 19325788-1

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

Location: CTMS-57, Building I, Roofing

Lab ID-Version‡: 19325789-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Eurofins Built Environment Testing West, LLC
2841 Dow Avenue, Suite 300, Tustin, CA 92780
(833) 465-5857 www.eurofinsus.com/Built

Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-58, Building I, Penetration Mastic Lab ID-Version‡: 19325790-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-59, Building I, Penetration Mastic Lab ID-Version‡: 19325791-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-60, Building I, Penetration Mastic Lab ID-Version‡: 19325792-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-61, Building J, Roofing Lab ID-Version‡: 19325793-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-62, Building J, Roofing

Lab ID-Version‡: 19325794-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Brown Roofing Material	ND
Composite Non-Asbestos Content:	10% Cellulose 10% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-63, Building J, Roofing

Lab ID-Version‡: 19325795-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-64, Building J, Penetration Mastic

Lab ID-Version‡: 19325796-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-65, Building J, Penetration Mastic

Lab ID-Version‡: 19325797-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Ron McDaniel
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Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-66, Building J, Penetration Mastic

Lab ID-Version‡: 19325798-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-67, Building L, Roofing

Lab ID-Version‡: 19325799-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Composite Non-Asbestos Content:	10% Glass Fibers 5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-68, Building L, Roofing

Lab ID-Version‡: 19325800-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-69, Building L, Roofing

Lab ID-Version‡: 19325801-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Content:	15% Glass Fibers
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-70, Building L, Penetration Mastic

Lab ID-Version‡: 19325802-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-71, Building L, Penetration Mastic

Lab ID-Version‡: 19325803-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-72, Building L, Penetration Mastic

Lab ID-Version‡: 19325804-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-73, Canopies Throughout, Roofing

Lab ID-Version‡: 19325805-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	10% Glass Fibers 10% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

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Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-74, Canopies Throughout, Roofing

Lab ID-Version‡: 19325806-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Black Roofing Tar and Felt 3	ND
Composite Non-Asbestos Content:	10% Glass Fibers 10% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-75, Canopies Throughout, Roofing

Lab ID-Version‡: 19325807-1

Sample Layers	Asbestos Content
Black Roofing Shingle with Pebbles	ND
Black Roofing Tar and Felt 1	ND
Black Roofing Tar and Felt 2	ND
Composite Non-Asbestos Content:	10% Glass Fibers 10% Synthetic Fibers
Sample Composite Homogeneity:	Moderate

Location: CTMS-76, Canopies Throughout, Penetration Mastic

Lab ID-Version‡: 19325808-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-77, Canopies Throughout, Penetration Mastic

Lab ID-Version‡: 19325809-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

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Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

Location: CTMS-78, Canopies Throughout, Penetration Mastic Lab ID-Version‡: 19325810-1

Sample Layers	Asbestos Content
Silver Paint	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	5% Cellulose
Sample Composite Homogeneity:	Moderate

Location: CTMS-79, Floor Float Lab ID-Version‡: 19333915-1

Sample Layers	Asbestos Content
White Compound	ND
Gray Compound	ND
Transparent Adhesive	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-80, Floor Float Lab ID-Version‡: 19333916-1

Sample Layers	Asbestos Content
White Compound	ND
Gray Compound	ND
Transparent Adhesive	ND
Sample Composite Homogeneity:	Moderate

Location: CTMS-81, Floor Float Lab ID-Version‡: 19333917-1

Sample Layers	Asbestos Content
White Compound	ND
Gray Compound	ND
Transparent Adhesive	ND
Sample Composite Homogeneity:	Moderate

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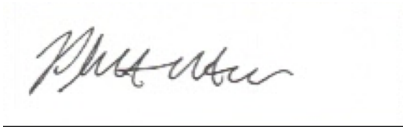
Client: Cardinal Environmental
C/O: Ron McDaniel
Re: Columbus Tustin MS; 17952 Beneta Way

Date of Sampling: 12-30-2024
Date of Receipt: 12-31-2024 and 01-02-2025
Date of Report: 01-02-2025

ASBESTOS PLM REPORT

PROJECT ANALYST AND SIGNATORY REPORT

Project Analyst



Analyst: Philip Newton

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Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Tustin MS
Project Address:	17952 beneta way
Sampling Technician:	Kade McDaniel
Samples Taken:	12/30/2024

003898817

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Lead Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CTMS-01	BULK	Admin/Office	Roofing
CTMS-02	BULK	Admin/Office	Roofing
CTMS-03	BULK	Admin/Office	Roofing
CTMS-04	BULK	Admin/Office	Penetration Mastic
CTMS-05	BULK	Admin/Office	Penetration Mastic
CTMS-06	BULK	Admin/Office	Penetration Mastic
CTMS-07	BULK	MPR	Roofing
CTMS-08	BULK	MPR	Roofing
CTMS-09	BULK	MPR	Roofing
CTMS-10	BULK	MPR	Penetration Mastic
CTMS-11	BULK	MPR	Penetration Mastic
CTMS-12	BULK	MPR	Penetration Mastic
CTMS-13	BULK	Mechanical Room	Roofing
CTMS-14	BULK	Mechanical Room	Roofing
CTMS-15	BULK	Mechanical Room	Roofing
CTMS-16	BULK	Mechanical Room	Penetration Mastic
CTMS-17	BULK	Mechanical Room	Penetration Mastic
CTMS-18	BULK	Mechanical Room	Penetration Mastic
CTMS-19	BULK	Building B	Roofing
CTMS-20	BULK	Building B	Roofing
CTMS-21	BULK	Building B	Roofing
CTMS-22	BULK	Building B	Penetration Mastic
CTMS-23	BULK	Building B	Penetration Mastic
CTMS-24	BULK	Building B	Penetration Mastic

Relinquished By: Ronald McDaniel
Date Relinquished: 12/31/2024 12:30pm
Received By: John Kang
Date Received: 12/31/24 11:42pm
Kade@cardinalenvironmental.org

Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

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Project Address:	17952 beneta way
Sampling Technician:	Kade McDaniel
Samples Taken:	12/30/2024

003898817

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Lead Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CTMS-25	BULK	Building B	Fiborus Roofing Material
CTMS-26	BULK	Building B	Fiborus Roofing Material
CTMS-27	BULK	Building B	Fiborus Roofing Material
CTMS-28	BULK	Building C	Roofing
CTMS-29	BULK	Building C	Roofing
CTMS-30	BULK	Building C	Roofing
CTMS-31	BULK	Building C	Penetration Mastic
CTMS-32	BULK	Building C	Penetration Mastic
CTMS-33	BULK	Building C	Penetration Mastic
CTMS-34	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-35	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-36	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-37	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-38	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-39	BULK	Buildings D0-D7 & O2	Penetration Mastic
CTMS-40	BULK	Building E	Penetration Mastic
CTMS-41	BULK	Building E	Penetration Mastic
CTMS-42	BULK	Building E	Penetration Mastic
CTMS-43	BULK	Building F	Roofing
CTMS-44	BULK	Building F	Roofing
CTMS-45	BULK	Building F	Roofing
CTMS-46	BULK	Building F	Penetration Mastic
CTMS-47	BULK	Building F	Penetration Mastic
CTMS-48	BULK	Building F	Penetration Mastic

Relinquished By: Ronald McDaniel Date Relinquished: 12/31/2024 12:30pm
Received By: Johntapey Date Received: 12/31/24 12:43pm
Kade@cardinalenvironmental.org

Lab Report Number:

Chain Of Custody

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 862-7541
Fax: (714) 730-1697

Project Name:	Columbus Tustin MS
Project Address:	17952 beneta way
Sampling Technician:	Kade McDaniel
Samples Taken:	12/30/2024

003898817

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Lead Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CTMS-49	BULK	Building G	Roofing
CTMS-50	BULK	Building G	Roofing
CTMS-51	BULK	Building G	Roofing
CTMS-52	BULK	Building G	Penetration Mastic
CTMS-53	BULK	Building G	Penetration Mastic
CTMS-54	BULK	Building G	Penetration Mastic
CTMS-55	BULK	Building I	Roofing
CTMS-56	BULK	Building I	Roofing
CTMS-57	BULK	Building I	Roofing
CTMS-58	BULK	Building I	Penetration Mastic
CTMS-59	BULK	Building I	Penetration Mastic
CTMS-60	BULK	Building I	Penetration Mastic
CTMS-61	BULK	Building J	Roofing
CTMS-62	BULK	Building J	Roofing
CTMS-63	BULK	Building J	Roofing
CTMS-64	BULK	Building J	Penetration Mastic
CTMS-65	BULK	Building J	Penetration Mastic
CTMS-66	BULK	Building J	Penetration Mastic
CTMS-67	BULK	Building L	Roofing
CTMS-68	BULK	Building L	Roofing
CTMS-69	BULK	Building L	Roofing
CTMS-70	BULK	Building L	Penetration Mastic
CTMS-71	BULK	Building L	Penetration Mastic
CTMS-72	BULK	Building L	Penetration Mastic
CTMS-73	BULK	Canopies Throughout	Roofing
CTMS-74	BULK	Canopies Throughout	Roofing

Relinquished By: Ronald McDaniel
Date Relinquished: 12/31/2024 12:30pm
Received By: John Kang
Date Received: 12/31/24 12:30pm
Kade@cardinalenvironmental.org

Lab Report Number:

Chain Of Custody

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Tustin, California 92780
Phone: (714) 862-7541
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Project Address:	17952 beneta way
Sampling Technician:	Kade McDaniel
Samples Taken:	12/30/2024

003898817

Turn Around Time:					
RUSH (3 Hour)	RUSH (Same Day)	24 Hour	48 Hour	72 Hour	96 Hour

Analysis Required:					
PLM	PCM	TEM	1000 Point Count	Lead Wipe	Lead Water Analysis

Sampling Information

Sample Number	Sample Type	Location	Material
CTMS-75	BULK	Canopies Throughout	Roofing
CTMS-76	BULK	Canopies Throughout	Penetration Mastic
CTMS-77	BULK	Canopies Throughout	Penetration Mastic
CTMS-78	BULK	Canopies Throughout	Penetration Mastic

Relinquished By: Ronald McDaniel Date Relinquished: 12/31/2024 12:30pm
Received By: JohnKang Date Received: 12/31/24 12:43pm Kade@cardinalenvironmental.org

Lead Survey Report

Lead Survey Report

Cardinal Environmental Consultants Inc.
2681 Dow Avenue Suite C-1
Tustin, California 92780
Phone: (714) 730-5931
Fax: (714) 730-1697

Date: November 20th, 2024

Owner/Client: Tustin USD
300 South C Street
Tustin, CA 92780

Site Address: Columbus Middle School
17952 Beneta Way
Tustin, CA 92780

Subject: **Lead Inspection Report (Building H, K, and E)**

To whom it may concern:

Cardinal Environmental Consultants conducted a pre-renovation lead inspection of the major paint systems of Columbus Tustin Middle School. The survey is specific to buildings H, K, and E. The campus is composed of many various structures, mostly bare a stucco-based exterior. All paint systems associated with the renovation project(s) have been sampled in accordance with local and federal regulations. XRF data, sampling methodology and recommendations can be found on subsequent pages of this report.

Regulatory Compliance:

The EPA and the Department of Housing and Urban Development (HUD) have established quantitative standards for lead concentration in painted surfaces. The standard for public housing, above which abatement or removal is required, is 1.0 mg/cm2 or 0.5% lead by weight. No official standard exists for school buildings. Los Angeles County and L.A. Unified School District are understood to have set a standard of 0.7 mg/cm2 – above which abatement is required. Currently most of the regulations relate specifically to abatement activities**.**

Generally, HUD (Department of Housing and Urban Development) initiated lead regulations which were then adopted by the state CDPH (California Department of Public Health).

Renovation, Repair and Painting Rule (RRP)

The new regulation outlines procedures for identifying lead paint and completing abatement of lead paint. Additional requirements for certification and clearances are also addressed. Abatement activity triggers the regulation when paint systems with 1.0mg/C2 or .5% are disturbed.

Lead Survey

The new EPA lead regulation, 40CFR 745, *Renovation, Repair and Painting Rule (RRP),* which became effective April 22, 2010, requires construction professionals to become "Certified Renovators" and firms to become "Certified Firms". The regulation applies to all contractors, property managers and other building professionals who disturb painted surfaces while conducting plumbing, electrical, painting, drywall, flooring, window replacement, landscaping, construction, renovation, remodeling, and demolition work.

The new rule is instigated when more than six square feet of interior painted surfaces and twenty square feet of exterior surfaces are disturbed. As with HUD and the state adoption of HUD, the rule applies to lead paint systems above (1.0 mg/cm2 *as indicated by an XRF device* or .5% by weight).

The following is a table that outlines the regulations and requirements for each.

	Lead Levels Instigated	**Training and certifications requirements**	**Disturbance level**	**Firm Licensing**
Federal HUD State CDPH	1.0mg/C2 or .5%	Worker training and certificate/special state certificate for supervisor	When conducting abatement to remove a lead hazard for a period of twenty years or more	CSLB license is required to conduct contract work
Federal Lead Renovation Rule	1.0mg/C2 or .5%	Supervisor renovator certificate/ at least "in house" training certificates for additional workers	6 sf interior and 20 sf of exterior	Contracting Firm must be Certified
OSHA 1532.1	600 ppm Or .06%	no certificates required	Initiated by "trigger task" to include manual demolition and sanding	No special license

OSHA Compliance:

OSHA (Occupational Safety and Health Administration) through regulation 1532.1 further delineates requirements for lead activities. 1532.1 defines "trigger tasks" (e.g., manual demolition, etc.) that disturb lead paint and the contractor responsibilities to its employees. The regulation specifically addresses PEL's (permissible exposure limits) to staff disturbing lead paint. This regulation is initiated when "trigger task" work is implemented on paint systems with .06% or 600 ppm (parts per million). It should be noted that this level (.06%) is virtually any amount of lead paint. As of January 2002, OSHA now requires all contractors to notify the department when disturbing lead paint above 1.0mg/cm2. This level is the same threshold for abatement by HUD.

OSHA requires that the employer is required to protect their employees to the level stipulated in the Standard, or to do an exposure assessment. An exposure assessment is the air monitoring of an employee during lead work to determine his exposure and ultimately to determine the level of protection required. This assessment is applicable to paint systems above .06% or 600 ppm.

Lead Survey

Methodology:

The data was developed using an X Ray Diffraction device, which reports lead content in milligrams per square centimeter of surface area (mg/cm2). The reading represents the quantity of lead between the surface and the substrate under the square centimeter of surface area contacted by the test device. If the substrate contains lead, the test result will be affected. (Galvanized metal is an example of this.) A positive reading by the XRF definitely means that lead was detected.

Results:

The survey included 93 XRF readings, covering representative building components, substrates, and paint colors on or in the specified school buildings. The lead content for the buildings is very low with only a few items noted in the survey.

The following table lists the higher lead containing components that could likely require demolition and/or removal. These items would certainly require "abatement procedures" to be implemented.

Subsequent tables illustrate all of the paint systems at the site. Regulations may apply to other components with lower levels of lead. The contractor is required to review and verify the scope of work for the project and determine the impact of activities on lead painted surfaces (at any level).

Columbus Tustin Middle School

Building E		
Door frames	Entry Exit	6 each (wood only)

Building H		
Door frame	Entry Exit	6 each (wood only)

Contractors are to base their bids on the quantities provided. The amount provided is an approximation.

Summary/Recommendations:

We recommend "lead certified" painting contractors for the painting of buildings coated with lead paint. Preparation of these surfaces falls under the "trigger task" category of OSHA 1532.1. Preparation of painted surfaces and the ultimate "guarantee" of the final painted product is better completed by a "single" contractor.

RRP certified firms should be considered for incidental work that disturbs small amounts of lead paint. These categories of work may include concrete coring (through lead paint) and structure welding (door hinges etc.).

Lead Survey

Abatement companies with CDPH (California Department of Public Health) lead certified staff will be required for all abatement work. The companies selected will have to ensure that a certified lead supervisor is present during abatement preparation and be within two hours (response time) during abatement activities.

Painting contractors will be required to collect all paint chips from the preparation activities. The contractor will sample and categorize the waste for disposal. Proof of sampling and waste disposal will be required.

Metal components (coated with lead paint) will likely be recycled. A letter (stating acceptance of material) will be required from the contractor's recycling facility.

All other waste produced from abatement activities will be separated and staged in a safe storage area at the project site during the sampling process. The characterization of the waste can take up to two weeks and an area will need to be allocated for this purpose. The contractor will be required to conduct and pay all costs associated with the characterization of the waste. Copies (proof) of all characterization of waste will be demanded on completion and before waste transport.

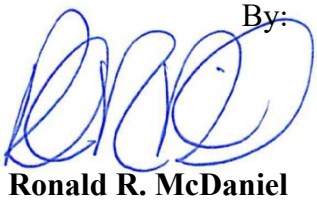
Final Comments:

Other contractors at the site should be made aware of the lead paint issues and use "lead safe" work practices. Sand blasting, dry sanding, and torching should be restricted in these areas or, if that is not feasible, use CDPH certified employees for these processes.

November 20th, 2024

Sincerely yours,
CARDINAL ENVIRONMENTAL CONSULTANTS INC.,
A California Corporation

By:



Ronald R. McDaniel
California Certified Asbestos Consultant #01-2865
CDPH Certified Lead Inspector/Assessor and Project Monitor/Designer #3599

Lead Survey

Note: Even minimal amounts of lead containing paint/ material are regulated for worker health & safety by Cal-OSHA and Federal OSHA guidelines. At a minimum lead safe work practices must be conducted during any impact to lead containing materials. Any questions regarding lead safe work practices or the regulations should be forwarded to the owner's consultant.

Lead Sampling Data

17952 Beneta Way
Tustin, CA 92780
Columbus Tustin Middle School

Lead Sampling Data

Inspection Date: 11/12/2024

Bldg.	Location	Component	Substrate	Color	Lead Mg/cm2	Condition
Columbus Tustin MS	E-1	Door Frame	Wood	Beige	1.30	Good
Columbus Tustin MS	E-1	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	E-1	Dripping edge Flasing	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	E-1	Wall	Ceramic Tile	White	0.00	Good
Columbus Tustin MS	E-1 Exterior	Wall	Stucco	White	0.00	Good
Columbus Tustin MS	E-2 Exterior	Wall	Stucco	White	0.00	Good
Columbus Tustin MS	E-2	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	E-2	Door Frame	Wood	Beige	0.00	Good
Columbus Tustin MS	E-2	Wall	Ceramic Tile	White	0.00	Good
Columbus Tustin MS	E-2	Wall	Plaster Beige	Beige	0.00	Good
Columbus Tustin MS	E-2 Storage	Door	Metal	Beige	0.00	Good
Columbus Tustin MS	E-3 Exterior	Downspout Pipe	Metal	White	0.00	Good
Columbus Tustin MS	E-3 Exterior	Bench	Ceramic Tile	Burgandy	0.00	Good
Columbus Tustin MS	E-3	Door Frame	Wood	White	1.00	Good
Columbus Tustin MS	E-3	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	E-3	Wall	Plaster	White	0.00	Good
Columbus Tustin MS	E-3	Beam	Wood	White	0.00	Good
Columbus Tustin MS	E-3	Wall	Ceramic Tile	Beige	0.00	Good

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Bldg.	Location	Component	Substrate	Color	Lead Mg/cm2	Condition
Columbus Tustin MS	E-3 Storage	Door	Metal	White	0.00	Good
Columbus Tustin MS	E-3 Storage	Door Frame	Metal	White	0.00	Good
Columbus Tustin MS	E-3 Exterior	Rain Gutter	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	E-3 Exterior	Dripping edge Flasing	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	E-3 Exterior	Beam	Wood	White	0.00	Good
Columbus Tustin MS	H-1	Door Frame	Wood	Beige	0.20	Good
Columbus Tustin MS	H-1	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	H-1 Exterior	Wall	Transite Panel	Navy Blue	0.10	Good
Columbus Tustin MS	H-1	Wall	Plaster	White	0.00	Good
Columbus Tustin MS	H-2	Door Frame	Metal	White	0.00	Good
Columbus Tustin MS	H-2	Door	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	H-2, Storage 1	Door	Metal	White	0.00	Good
Columbus Tustin MS	H-2, Storage 1	Door Frame	Metal	White	0.00	Good
Columbus Tustin MS	H-2, Storage 2	Door	Metal	White	0.00	Good
Columbus Tustin MS	H-2, Storage 2	Door Frame	Metal	White	0.00	Good
Columbus Tustin MS	H-2	Pipe	Metal	White	0.40	Good
Columbus Tustin MS	H-2	Beam	Wood	White	0.10	Good
Columbus Tustin MS	H-2, Exterior	Wall	Stucco	White	0.10	Good

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Columbus Tustin MS	H-2, Interior	Wall	Plaster	White	0.00	Good
Columbus Tustin MS	H-2, West Side	Door Frame	Wood	Navy Blue	1.40	Good
Columbus Tustin MS	H-2, West Side	Door Lintel	Metal	Navy Blue	0.20	Good
Columbus Tustin MS	H-2, West Side	Door Frame	Metal	Navy Blue	0.30	Good
Columbus Tustin MS	H-2, West Side	Door	Metal	Navy Blue	0.10	Good
Columbus Tustin MS	H-2	Wall	Transite Panel	Navy Blue	0.10	Good
Columbus Tustin MS	H-3	Door Frame	Wood	Beige	0.20	Good
Columbus Tustin MS	H-3	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	H-3, Interior	Beam	Wood	White	0.00	Good
Columbus Tustin MS	H-3 Exterior	Beam	Wood	White	0.10	Good
Columbus Tustin MS	H-3 Exterior	Downspout Pipe	Mertal	White	0.00	Good
Columbus Tustin MS	H-3 Exterior	Wall	Stucco	White	0.00	Good
Columbus Tustin MS	H-3 Exterior	Wall	Transite Panel	Navy Blue	0.00	Good
Columbus Tustin MS	H-3, Interior	Wall	Plaster	White	0.10	Good
Columbus Tustin MS	K-1, Exterior	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	K-1, Exterior	Wall	Transite Panel	Navy Blue	0.00	Good
Columbus Tustin MS	K-1, Exterior	Drinking Fountain	Pocelain	White	0.00	Good
Columbus Tustin MS	K-1, Exterior	Door Frame	Wood	Navy Blue	0.00	Good

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Columbus Tustin Middle School

Lead Sampling Data

Inspection Date: 11/12/2024

Bldg.	Location	Component	Substrate	Color	Lead Mg/cm2	Condition
Columbus Tustin MS	K-1, Storage	Floor	Ceramic Tile	Mustard	0.00	Good
Columbus Tustin MS	K-1, Storage	Door Frame	Wood	Beige	0.00	Good
Columbus Tustin MS	K-1, Storage	Door	Wood	Beige	0.00	Good
Columbus Tustin MS	K-2, Interior	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	K-2, Interior	Door Frame	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	K-2, Exterior	Dripping Edge Flashing	Metal	Olive Green	0.00	Good
Columbus Tustin MS	K-2, Exterior	Wall	Stucco	White	0.00	Good
Columbus Tustin MS	K-2, Exterior	Wall	Transite Panels	Navy Blue	0.00	Good
Columbus Tustin MS	K-2, Exterior	Rain Gutter	Metal	White	0.00	Good
Columbus Tustin MS	K-2, Exterior	Downspout Pipe	Metal	White	0.00	Good
Columbus Tustin MS	K-2, Exterior	Tackig board Frame	Wood	Yellow and Blue	0.00	Good
Columbus Tustin MS	K-2, Mechanical Room	Door	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	K-2, Mechanical Room	Door Frame	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	K-2, Exterior	Beams	Wood	White	0.00	Good
Columbus Tustin MS	Girl's Resroom	Door	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	Girl's Resroom	Door Frame	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	Girl's Resroom	Wall	Ceramic	Beige	0.00	Good
Columbus Tustin MS	Girl's Resroom	Floor	Ceramic	Brown	0.00	Good
Columbus Tustin MS	Girl's Resroom	A/C Duct	Metal	Beige	0.00	Good
Columbus Tustin MS	Girl's Resroom	Sink	Porcelain	White	0.00	Good

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Columbus Tustin MS	Girl's Resroom	Toillet	Porcelain	White	0.00	Good
Columbus Tustin MS	Girl's Resroom	Wall	Drywall	White	0.00	Good
Columbus Tustin MS	Girl's Resroom	Ceiling	Drywall	White	0.00	Good
Columbus Tustin MS	Boy's Restroom	Sink	Porcelain	White	0.00	Good
Columbus Tustin MS	Boy's Restroom	Urinals	Porcelain	White	0.00	Good
Columbus Tustin MS	Boy's Restroom	Toillets	Porcelain	White	0.00	Good
Columbus Tustin MS	Boy's Restroom	Door Frame	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	Boy's Restroom	Door	Metal	Navy Blue	0.00	Good
Columbus Tustin MS	Boy's Restroom	A/C Duct	Metal	Beige	0.00	Good
Columbus Tustin MS	Boy's Restroom	Wall	Ceramic	Blue and Burgandy	0.00	Good
Columbus Tustin MS	Boy's Restroom	Wall	Ceramic	Beige	0.00	Good
Columbus Tustin MS	Boy's Restroom	Wall	Stucco	Beige	0.00	Good
Columbus Tustin MS	Custodian Storage	Door	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	Custodian Storage	Door Frame	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	Custodian Storage	Door Lintel	Wood	Navy Blue	0.00	Good
Columbus Tustin MS	Custodian Storage	Wall	Plaster	Beige	0.00	Good
Columbus Tustin MS	Custodian Storage	Wall	Brick	Beige	0.00	Good
Columbus Tustin MS	Custodian Storage	Tool Rack	Wood	Beige	0.00	Good
Columbus Tustin MS	Custodian Storage	Tackle board	Corck	Beige	0.00	Good