



BID DOCUMENTS COVER SHEET

CONTRACT DOCUMENTS

FOR

L-1203 Votech Roof Replacement

AT

Los Medanos College
2700 East Leland Road, Pittsburg, CA 94565

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

Consists of:

VOLUME 1
SPECIFICATIONS

Architect:

Steelhead Engineers
2708 Wasatch Drive
Mountain View, CA 94040-1313

August 20, 2022

SECTION 00010
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VOLUME 1

SPECIFICATIONS

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DIVISION 01 – GENERAL REQUIREMENTS

See SECTION 00800 SUPPLEMENTARY GENERAL CONDITIONS

TECHNICAL SPECIFICATIONS

02 41 05	Roof-Related Selective Demolition
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07 60 00	Roof-Related Flashing and Sheet Metal
07 72 00	Roof Accessories
07 90 00	Roof-Related Sealants

END OF SECTION

Campus Overview

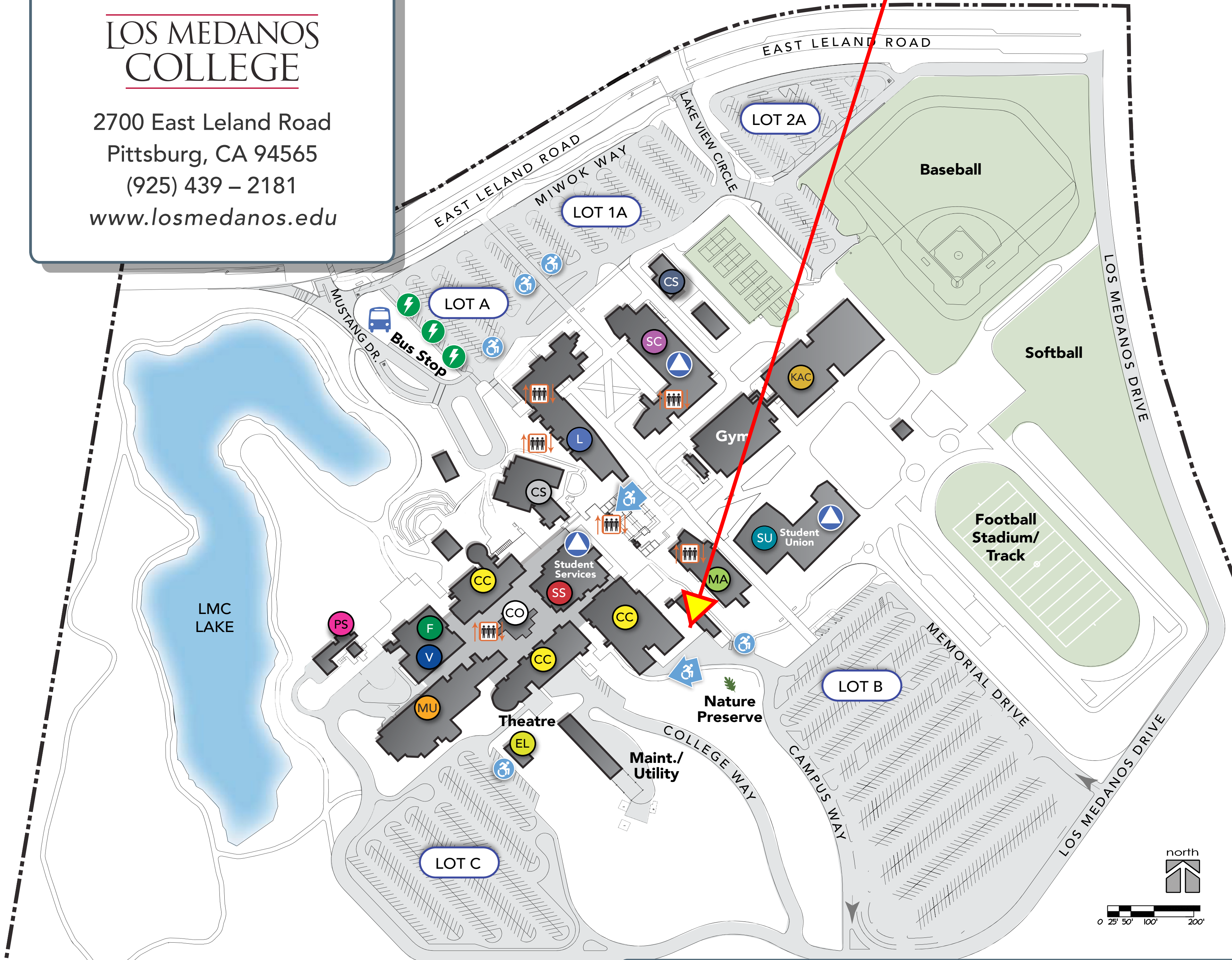
LOS MEDANOS COLLEGE

2700 East Leland Road
Pittsburg, CA 94565
(925) 439 – 2181
www.losmedanos.edu

Pre-bid Meeting Location -
Outside of VoTech Building

Building Legend

- CC** College Complex
- CO** CORE
 - Business Services
 - Center for Academic Support
 - Equity & Inclusion
- CS** Child Study Center
- CS** Campus Safety
 - Police Services
- EL** ETEC Lab
- F** Cafeteria
- KAC** Kinesiology & Athletics Complex
- L** Library
 - Community Room
- MA** Math
- MU** Music
 - Recital Hall
- PS** Classrooms
- SC** Science
 - MESA Center
- SS** Student Services
 - Admissions/Cashier
 - Assessment Services
 - Counseling Services
 - DSPS
 - EOPS, CARE, CalWORKs
 - Financial Aid/Scholarships
 - Information/Welcome Center
 - LMC Foundation
 - Office of Instruction
 - President's Office
 - Transfer & Career Services
- SU** Student Union
 - Bookstore
 - Conference Center
 - Food Pantry
 - Honors Program
 - International Students Program
 - Latinx Empowerment Center
 - Reflection Room
 - Student Life
 - Student Lounge
 - Unity Center
 - Umoja Scholars Program
- V** Veterans Resource Center



Smoking restricted to parking lot areas.

- E-Charging Stations
- All Gender Restrooms
- Accessible Parking
- Accessible Entrance
- Bus Stop
- Elevator



Section 00100
NOTICE INVITING BIDS

L-1203 VOTECH ROOF REPLACEMENT

LOS MEDANOS COLLEGE
2700 E Leland Rd.
Pittsburg, CA 94565

NOTICE IS HEREBY GIVEN that the Governing Board of the Contra Costa Community College District (District), Martinez, California, will receive sealed bid proposals for the furnishing of all labor, materials, equipment, transportation and services for the construction of the project entitled **L-1203 Votech Roof Replacement**.

Construction Cost Estimate (Range): \$550,000 - \$600,000.

License Required: California B - General Building.

SCOPE OF WORK: In general, the Work consists of the following, but not limited to:

- Abatement and demolition of the existing built-up roof and underlying light weight concrete, installation of new tapered insulation, installation of new modified bitumen and single-ply roof systems, and all related work.

The District does not provide hardcopies of bid documents or reimburse cost of printing, delivery, or any expenses related to the bidding process.

For information directly from the Contra Costa Community College District, you may log in to the District Website: <https://webapps.4cd.edu/apps/purchasingviewbids/default.aspx>. Project documents available include, but are not limited to plans, specifications, addenda, bidders lists, bid results, etc., and can be viewed on this District webpage. Builders Exchanges around Northern California are also notified.

All questions related to this project must be submitted electronically, *no later than Wednesday, August 17, 2022, prior to 2:00 PM* to:

Ben M. Cayabyab, Contracts Manager
Contra Costa Community College District
Email: bcayabyab@4cd.edu

Each bid shall be made on the BID PROPOSAL FORM (SECTION 00300), which is included in the Bid Documents and when submitted, shall be accompanied by a Bid Bond or Certified Cashier's Check in the amount of 10% of bid (made payable to the Contra Costa Community College District). The District reserves the right to forfeit Bid Bond submitted for failure of the successful bidder to secure Payment and Performance Bonds.

IMPORTANT INFORMATION:

PLEASE NOTE: A Site Visit will be held immediately following the Pre-Bid meeting. Please sign in on the attendance Log. Attendees are required to wear face masks, as required by CCC Health Services.

MANDATORY Pre-Bid Meeting and Job Walk: August 10, 2022, at 1:00 PM

College Complex Auto Technology Parking Lot

Los Medanos College (see map – Section 00016)

2700 E. Leland Road, Pittsburg, CA.

BIDS DUE PRIOR TO:

Wednesday, August 31, 2022, at 2:00 PM

Bids Must Be Received at:

CONTRA COSTA COMMUNITY COLLEGE DISTRICT (Lobby)

500 Court St.

Martinez, CA 94553

Attn: Ben Cayabyab – Contracts Manager (CCCCD)

Bids must be received by the District prior to the time and by the date noted above. Bids that are not received by the District prior to the time and by the date noted above will not be accepted, and will be returned to the Bidder, unopened. The District is not responsible for lost or misplaced proposals delivered by a 3rd party carrier.

The successful bidder will be required to furnish a labor and material bond in an amount equal to one hundred percent (100%) of the contract price and a faithful performance bond in an amount equal to one hundred percent (100%) of the contract price, said bonds to be secured from a surety company acceptable to the Contra Costa Community College District and authorized to execute such surety in the State of California. Certificates of Liability Insurance with proper endorsements shall be required for the successful bidder.

This project is a public works project and is subject to prevailing wage rate laws. A copy of the prevailing rates of wages is on file with the Contracts & Purchasing Office of the Contra Costa Community College District, available at the DIR website at <https://www.dir.ca.gov/oprl/pwappwage/PWAppWageStart.asp>. Said rates of wages shall be included in the contract for the work by this reference.

Attention is directed to Section 4100 through 4113 of the Public Contract Code concerning Subcontractors, with emphasis on Section 4104, known as the "Subletting and Subcontracting Fair Practices Act, effective July 1, 2014".

Attention is directed to Labor Code Section 1725.5 regarding Department of Industrial Relations (DIR) contractor registration process including registration criteria and implementation of DIR registration requirements. Labor Code Section 1771.7 establishes contractor's obligation to submit Certified Pay Roll (CPR) to the Department of Labor and Standards Enforcement (DLSE) and public works monitoring and enforcement. Labor Code Section 1773.3 requires the District to submit a PWC-100 to DIR for all public works contract awarded effective January 1, 2015.

Failure to submit all of the above may cause your bid to be non-responsive and disqualified for contract award.

The contract time is **325 Calendar Days** between the Notice to Proceed date and the Contract Substantial Completion date. Attention is directed to Section 00600, Construction Agreement, Article 5, regarding liquidated damages. Liquidated Damages shall be set for **One Thousand Dollars (\$1,000)** for each Calendar Day the Work is delayed beyond the contract Substantial Completion date; and **Five Hundred Dollars (\$500)** for each Calendar Day Remaining Work is delayed beyond the Contract Final Completion Date. The Governing Board of the Contra Costa Community College District reserves the right to reject any and all bids and/or waive any informality or irregularity in any bid received. No bidder may withdraw their Bid for a period of ninety (90) days after the date set for opening thereof.

END OF SECTION 00100

SECTION 00200
INSTRUCTIONS TO BIDDERS

1.1 ISSUING OF DOCUMENTS

Bidding Documents may be examined on the District's Open Solicitations web page, <https://webapps.4cd.edu/apps/purchasingviewbids/default.aspx>.

1.2 QUALIFICATIONS OF BIDDERS

- A. Bidders may be required to furnish evidence satisfactory to the District and the Architect that he has sufficient means and has had sufficient experience in the class of work called for to enable him to complete the Contract in a satisfactory manner.
- B. Bidders shall be Contractors properly licensed in accordance with the laws of the State of California.
- C. The successful Bidder shall furnish satisfactory Certificates of Insurance coverage as specified in the Contract Documents.

1.3 IMPORTANT DATES

MANDATORY Pre-Bid Meeting and Job Walk: August 10, 2022, at 1:00 PM

Last Date and Time for Bidder's

Request for Information: Wednesday, August 17, 2022

Last Day to issue Addendum: Wednesday, August 24, 2022

BIDS DUE PRIOR TO: Wednesday, August 31, 2022, at 2:00 PM

1.4 RECEIPT AND OPENING OF BIDS

- A. Contra Costa Community College District hereinafter referred to as the District, will receive Bids at the same time and place specified in the Notice inviting Bids.
- B. Complete the Bid Proposal Form included in the Project Manual.
- C. The envelopes containing the Bids shall be sealed, addressed to the District, and designated as **"L-1203 Votech Roof Replacement, Los Medanos College"**. The envelope shall contain the name and address of the Bidder.
- D. Bids that are mailed shall have the previously described envelope placed inside an envelope addressed to: **CONTRA COSTA COMMUNITY COLLEGE DISTRICT, 500 Court Street, Martinez, CA 94553, ATTENTION: Ben Cayabyab, Contracts Manager**. Bids should be mailed in time to be received prior to the time set forth in the Notice inviting Bids. The District highly recommends bidders hand carry their proposals as the District is not responsible for lost or late deliveries by 3rd party carriers.
- E. Bids which are conditional (or which make alterations, omissions, or reservations to the terms of the Bidding Documents) may be rejected as non-responsive.
- F. All monetary figures are required, both in writing and in numerals. In event of conflict between written quotations and numerical quotations, written quotations shall govern.
- G. Type or print all bid data legibly in ink except signatures which shall be in script. Mistakes may be crossed out and corrections inserted, if each is initialed in ink by signer of Bid.
- H. Bidder's business address and signature shall be on the Bid. A Bid by a partnership shall furnish the full names of partners and be signed in the partnership name by one member of the partnership,

or by authorized representative, followed by the signature and designation of the person signing. Bids by corporations, with corporate seal affixed, shall be signed with the legal name of the corporation followed by the name of the state of incorporation and by the signature and designation of the person authorized to bind it to the matter. The name of each person signing shall also be typed or printed below the respective signatures. When required by the District, satisfactory evidence of authority of the office signing on behalf of the corporation shall be furnished.

- I. No Bids will be received after the date and time set forth in the Notice Inviting Bids.

1.5 BID SECURITY

- A. Submit with the Bid a Bid Security in the amount of 10 percent (10%) of the Bid.
- B. The District reserves the right to forfeit the Bid Bond submitted for failure of the successful bidder to secure Payment & Performance Bonds.

1.6 SURETY BONDS

- A. The successful Bidder shall furnish a Labor and Material Payment Bond in the amount equal to one hundred percent (100%) of the Contract Price and a faithful Performance Bond in the amount equal to 100 percent (100%) of the Contract Price as security for the successful performance of the work and payment of persons performing labor and furnishing materials. The Bonds shall be executed by a surety company or companies acceptable to the District and authorized to execute such in the State in which the Project is located and shall be furnished within 10 days after Notice of Acceptance of said Bid. Surety shall be made in favor of the District and shall cover the guarantee periods as well as the construction period.

1.7 WITHDRAWAL OR REVISIONS OF BID

- A. This Bid may be withdrawn or revised prior to the scheduled time for receipt. Bids not withdrawn prior to the scheduled time for receipt may not be withdrawn for a period of 90 days.

1.8 BID PROTESTS

- A. Inquiries or questions based on alleged patent ambiguity of the plans, specifications or estimate must be communicated as a bidder inquiry prior to bid opening. Any such inquiries or questions, submitted after bid opening, will not be treated as a bid protest.
- B. Bidder may file a protest with the District against the Bid of other Bidder or Bidders ("Bid Protest") subject to the provisions of this Article. The procedures and time limits set forth in this Article are mandatory and are a Bidder's sole and exclusive remedy in protesting other Bidders' bids. Failure to comply with these procedures shall constitute a waiver of any right to pursue a Bid Protest, or to contest the District's award of the contract for the work that is the subject of the Bid, in any legal proceeding before any authority with jurisdiction.
- C. Bid Protests and Responses shall be governed by the following time limitations:
 - 1. Bidder must deliver any Bid Protest to the District in writing before 2:00PM, five (5) working days after the date of bid opening. The District will reject any Bid Protest not received by the District by this deadline. Bidder must concurrently deliver a copy of its Bid Protest to all Bidders against whose Bids the Bid Protest is directed. The Bidder must include with its Bid Protest written proof to the District's satisfaction that Bidder has delivered a copy of its Bid Protest to the other Bidder whose bid is the subject of the Bid Protest.

2. A Bidder whose Bid is the subject of a Bid Protest must deliver its written response, if any, ("Response") to the District, before 2:00PM, five (5) working days after the date of bid opening. The District will reject any Response not received by the District by this deadline.
- D. Delivery of Bid Protest or Response:
1. Bidder may deliver a Bid Protest to the District by personal delivery or electronic transmission such as by facsimile. Bidder is solely responsible for ensuring that the District receives any Bid Protest or Response by the deadlines set forth herein.
 2. The District will not consider Bid Protests or Responses by telephone conversation or any other non-written communication.
 3. Bidder shall submit any Bid Protest or Response to: Ben Cayabyab, Contracts Manager, Contra Costa Community College District, 500 Court Street, Martinez, CA 94553, Email: bcayabyab@4cd.edu, Facsimile: 925-370-7512.
- E. Content of Bid Protest:
1. A Bid Protest must state the basis for the protest and provide supporting evidence.
 2. A Bid Protest must refer to the specific portion of the Bid that forms the basis of the protest.
 3. A Bid Protest must include the name, address, and telephone number of the person representing the protesting Bidder.
 4. A Bid Protest must be clearly identified as a Bid Protest.

1.9 AWARD AND REJECTION OF BIDS

- A. In awarding or rejecting Bids, the District reserves the following rights:
1. Identification of successful Bidder will not be determined at time of opening Bids.
 2. To obtain opinion of counsel on legality and sufficiency of bids.
 3. To reject all Bids, to re-bid, or waive irregularities or informalities in a Bid, and to accept or reject alternates.
 4. Request proof that the successful Bidder can provide performance and payment bonds as required.

1.10 EXAMINE DOCUMENTS AND VISIT SITE

- A. Before submitting a Bid, the Bidder shall examine the Bidding Documents, visit the site of the work, attend the required site visit arranged by the District and obtain Certification of Attendance signed by the District, ascertain existing conditions and limitations, including those of labor, and include in the Bid a sum to cover the cost of all items described in the Contract Documents.
- B. No consideration will be granted for alleged misunderstanding of the materials to be furnished or work to be done. The tender of a Bid carries with it the agreement to terms and conditions referred to in the Contract Documents.

1.11 DISCREPANCIES, AMBIGUITIES, OR CONFLICTS

- A. If the Bidder is in doubt as to the true meaning of any part of the Contract Documents; finds discrepancies, errors or omissions therein; or finds variances in any of the Contract Documents with applicable rules, regulations, ordinances and/or laws, a written request for an interpretation or correction thereof must be submitted to the District's Contract Manager. Bidders are solely responsible for submitting to District's Contract Manager such request. Ambiguities or

inconsistencies arising as a result of separation of sections or portions of the drawings or specifications by or for subcontractor bidding shall not relieve the Contractor for providing the complete Work without increase to or adjustment in the Contract Price or the Time for performance. Interpretations or corrections of the Contract Documents will be by written addendum issued by the Architect. No person is authorized to render an oral interpretation or correction of any portion of the Contract Documents to any Bidder, and no Bidder is authorized to rely on any such oral interpretation or correction. Failure to request interpretation or clarification of any portion of the Contract Documents pursuant to the foregoing is a waiver of any discrepancy, defect or conflict therein.

1.12 ADDENDA

- A. Cost for work included in any Addenda issued during the time of bidding shall be included in the Bid, and will become a part of the Contract. List Addenda received as indicated on the Bid Form.

1.13 FORM OF AGREEMENT

- A. The form of agreement to be used for the Contract is provided by the District and is included in the Project Manual.

1.14 AWARD OF CONTRACT

- A. The District will be allowed a period of ninety (90) days after Bid Opening Date for evaluating the Bids.
- B. Bidders of record will be notified of the results of the District's evaluation of bids and Award of Contract, if any.
- C. The contractor shall begin work within ten (10) calendar days of receipt of Notice to Proceed.

END OF SECTION 00200

SECTION 00210
INFORMATION AVAILABLE TO BIDDERS

PART 1 - REPORT AND INFORMATION

- 1.1** Existence of reports, record drawings, and utility surveys: Contra Costa Community College District, its consultants, and prior contractors may have collected documents providing a general description of the site and conditions of the work. These documents may consist of geotechnical reports for and around the site, record drawings, utility drawings, and information regarding underground utilities. These reports, documents and other information are not part of the Contract Documents and do not show new work to be constructed, rather, they show existing conditions that Contractor may have to address as part of its construction planning.
- 1.2** Available Documentation: The following existing documentation has been made available for downloading via the District's web site:
<https://webapps.4cd.edu/apps/purchasingviewbids/default.aspx>
- A.** Project documents titled:
1. "R1227233_CCCCD LMC Votech Roof_Limited Asbestos and Lead Survey Rpt"
- 1.3** Contractor shall acknowledge and accept that the documents are not a part of the Contract Documents and are made available to bidders for reference only. The District and its representatives are not responsible for any and all discrepancies between the documents and the existing and actual as-built conditions, and do not guarantee the accuracy of the documents.
- 1.4** The District and Design Consultants assume no responsibility for the completeness or accuracy of the documents or the records compiled there from and the interpretations made from the documents. There is no express or implied guarantee that the conditions indicated in the documents are representative of those existing throughout the building and/or site Conditions differing substantially from those indicated may be encountered.

END OF SECTION 00210

**SECTION 00300
BID PROPOSAL FORM**

PROJECT NUMBER / NAME: L- 1203 Votech Roof Replacement

CAMPUS / LOCATION: Los Medanos College, 2700 E Leland Rd, Pittsburg, CA 94565

DISTRICT: CONTRA COSTA COMMUNITY COLLEGE DISTRICT
500 Court St, Martinez, CA 94553

Herein Referred to as "District"

1. INTRODUCTION

- A. The Bidder proposes to perform the Work for the Contract Sum and within the proposed Contract Time, based upon an examination of the site and the Bid and Contract Documents.
- B. The Bidder certifies this Bid is submitted in good faith.
- C. The Bidder agrees that the Contract Sum and other proposed terms will be considered in evaluating Bids and may be negotiated and adjusted before awarding of Contract.
- D. The signed copy of the Certification of the Visit to the Site shall be attached to the Bid Form Submittal.
- E. A fully executed Non-Collusion Affidavit signed by an authorized officer of the Bidder submitting Bid shall be attached to the Bid Form.
- F. **The District shall award the contract to the lowest responsive and responsible Bidder. The evaluation of the low bid shall be based on the total of Item 2.A Base Bid, and listed Additive/Deductive Alternates 3.1 and 3.2.**
- G. The District reserves the right to delete any or all Add Alternates, if any, through change orders within **30 calendar days** after the Award of Contract. If deleted by the District, the deleted dollar amount shall be the amount listed for the specific Add Alternate. The Contract Time will remain the same regardless if any Add Alternate is deleted.

2. CONTRACT SUM

A. BASE BID

For labor, materials, bonds, fixtures, equipment, tools, transportation, services, sales taxes, overhead and profit, and other costs necessary to complete the general construction in accordance with the Contract Documents, for a stipulated Contract Sum in the amount of:

_____ Dollars (\$ _____)
write amount above

3. ADDITIVE/DEDUCTIVE ALTERNATES

(SEE SPECIFICATION SECTION 07 52 16 SUBSECTIONS 1.08 AND 2.04 FOR FULL DESCRIPTION OF SCOPE FOR ALTERNATES #1 AND #2.)

1. Umbrella Warranty

Add/Deduct (circle one)

_____ Dollars (\$ _____)

write amount above

2. Install lightweight insulating concrete instead of tapered insulation

Add/Deduct (circle one)

_____ Dollars (\$ _____)

write amount above

4. COMPLETION TIME

A. For establishing the Date of Final Completion, the contract time for the Base Bid shall be as indicated in Section 00600, Construction Agreement. This time may be subject to modification to facilitate the work, as mutually agreed upon at a later date.

B. The Bidder certifies that the Bid is based on the Contract Time for completion as stated in Section 00600, Construction Agreement. Bidder further certifies that the Base Bid amount is sufficient to cover all labor, materials, central office and construction site overhead, profit, and all other costs related to the completion of the Project for the entire Project construction time for both the General Contractor and all Subcontractors, as stated above in paragraphs 2 and 3.

5. ADDENDA

A. The Bidder acknowledges receipt of the following Addenda, and certifies the Bid has provided for all modifications and considerations required therein.

None [☐]

Addendum No.: _____ dated _____

Addendum No.: _____ dated _____

Addendum No.: _____ dated _____

Addendum No.: _____ dated _____

B. List of Additional Addenda Attached: Yes [☐] No. [☐].

6. DESIGNATION OF SUBCONTRACTORS

- A. The Bidder has set forth a complete list indicating the type of work, name, and business address of each Subcontractor who will perform work in excess of one-half of one percent of the Contract Sum.
- B. Any portion of the work in excess of the specified amount having no designated Subcontractor shall be performed by the Bidder.
- C. Substitution of listed Subcontractors will not be permitted unless approved in advance by the District.
- D. Prior to signing the Contract, the District reserves the right to reject any listed Subcontractor.

	Type of Work	Subcontractor's Name	Business Address/Phone	CSLB License # and DIR Registration #
1				
2				
3				

- E. Complete list of Subcontractors is attached: Yes [] No []
- F. Continuation list of Subcontractors is attached: Yes [] No []

7. ACCEPTANCE AND AWARD

- A. The District reserves the right to reject this Bid and to negotiate changes before or after execution of the Contract. This Bid shall remain open and shall not be withdrawn for a period of 90 days after Bid Opening date.
- B. If written notice of acceptance of this Bid is mailed or delivered to the Bidder within 90 days after the date set for the receipt of this Bid, or other time before it is withdrawn, the Bidder will execute and deliver to the District a Contract prepared by District with the required Surety Bonds and Certificates of Insurance, within 10 days after personal delivery or deposit in the mail of the notification of acceptance.
- C. Notice of acceptance or request for additional information may be addressed to the Bidder at the address provided.

8. BID SECURITY

- A. The required 10 percent (10%) Bid Security for this Bid is attached in the form of:

() Bid Bond Issued By: _____

() Certified or Cashier's Check No. _____

Issued by: _____

9. BIDDER'S BUSINESS INFORMATION

A. Individual []: _____

Personal Name: _____

Business Name: _____

Address: _____

_____ Zip Code: _____

Telephone: _____

Fax Number: _____

B. Partnership []: _____

Co-partners' Names: _____

Business Name: _____

Address: _____

_____ Zip Code: _____

Telephone: _____

Fax Number: _____

C. Corporation []: _____

Firm Name: _____

Telephone: _____

Fax Number: _____

State of Incorporation: _____

President: _____

Secretary: _____

Treasurer: _____

Manager: _____

D. Power of Attorney: Name: _____

Title: _____

E. Contractor License No. _____ **State of** _____

F. Bidder is submitting this proposal on behalf of a Joint Venture. Names, license numbers, and relevant information are given on a separate attachment:

Yes [☐] No [☐].

G. Upon request, furnish appropriate documentation to substantiate and/or support the data given.

- 10.** The undersigned hereby certifies under penalty of perjury under the laws of the State of California that all the information submitted by the Bidder in connection with this Bid and all the representations herein made are true and correct.

Executed this day of _____

CSLB License No.

Expiration Date

DIR Registration No.

Firm Name

Signature

By (Print or Type Name)

Title

End of Section 00300



Section 00350

NONCOLLUSION AFFIDAVIT

(TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID)

State of California

County of Contra Costa

_____, being first duly sworn, deposes and says that he or she is of _____, the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that 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, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date: _____ Signature: _____

State of California
County of Contra Costa

On _____, before me, _____, Notary Public, personally appeared

_____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing is true and correct.

WITNESS my hand and official seal.

Date: _____ Signature: _____

[SEAL]

END OF SECTION 00350



SECTION 00450

CERTIFICATION OF SITE VISIT

The Governing Board of the
Contra Costa Community College District
500 Court Street
Martinez, California 94553

Gentlemen/Ladies:

I visited the **L-1203 Votech Roof Replacement** job site,

on _____ at _____ AM PM (Circle One)

to inspect the proposed work, which would be turned over to me in its present condition, with a representative of the Contra Costa Community College District in order to acquaint myself with the proposed work so that I might fully understand the facilities, difficulties, and restrictions attending the execution of the work under the contract, and acknowledge I had the opportunity to check the Record Drawing as-built drawings and/or previous Contract Documents, site conditions and Bid Documents with the authorized representative of the District.

Owner Representative:

Project Manager / CM – CCCCDC Facilities

Date

or

Manager – Buildings & Grounds

Date

Bidder:

Name of Firm or Company

Authorized Signatory

Address

Phone Number

Fax Number

NOTE: Any bidder who fails to return this CERTIFICATION, fully executed, including signature of company representative AND a Contra Costa Community College District representative, with the proposal form, may have their bid rejected as non-responsive.

END OF SECTION 00450

**PAYMENT BOND
(CALIFORNIA PUBLIC WORK)**

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, the Contra Costa Community College District (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "Principal" or "Contractor"), an agreement for the work described as follows: _____ (hereinafter referred to as the "Public Work"); and

WHEREAS, said Contractor is required to furnish a bond in connection with said Contract, and pursuant to California Civil Code Section 9550;

NOW, THEREFORE, We, _____, the undersigned Contractor, as Principal; and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the Contra Costa Community College District and to any and all persons, companies, or corporations entitled by law to file stop notices under California Civil Code Section 9100, or any person, company, or corporation entitled to make a claim on this bond, in the sum of _____ Dollars (\$ _____), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which payment will and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, its heirs, executors, administrators, successors, or assigns, or subcontractor, shall fail to pay any person or persons named in Civil Code Section 9100; or fail to pay for any materials, provisions, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind; or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Unemployment Insurance Code Section 13020 with respect to work and labor thereon of any kind, then said Surety will pay for the same, in an amount not exceeding the amount herein above set forth, and in the event suit is brought upon this bond, also will pay such reasonable attorneys' fees as shall be fixed by the court, awarded and taxed as provided in California Civil Code Sections 9550 et seq.

This bond shall inure to the benefit of any person named in Civil Code Section 9100 giving such person or his/her assigns a right of action in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the obligation of the bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, or specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described; or pertaining or relating to the furnishing of labor, materials, or equipment therefor; nor by any change or modification of any terms of payment or extension of time for payment pertaining or

relating to any scheme or work of improvement herein above described; nor by any rescission or attempted rescission of the contract, agreement or bond; nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond; nor by any fraud practiced by any person other than the claimant seeking to recover on the bond; and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given; and under no circumstances shall the Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the Obligee and the Contractor or on the part of any obligee named in such bond; that the sole condition of recovery shall be that the claimant is a person described in California Civil Code Sections 9100, and who has not been paid the full amount of his or her claim; and that the Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20____.

PRINCIPAL/CONTRACTOR:

By: _____

SURETY:

By: _____

Attorney-in-Fact

IMPORTANT: THIS IS A REQUIRED FORM.

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of agent or representative
for service for service of process in California)

Telephone: _____

Telephone: _____

[illegible]

On _____ before me, _____, (insert name and title of the officer)
a Notary Public in _____ and for said _____ State, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument as the Attorney-in-Fact of the _____ (Surety) and acknowledged to me that he/she/they subscribed the name of the _____ (Surety) thereto and his own name as Attorney-in-Fact on the executed instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public in and for said State

(SEAL)

Commission expires:_____

NOTE: A copy of the power-of-attorney to local representatives of the bonding company must be attached hereto.

**CONTRACT PERFORMANCE BOND
(CALIFORNIA PUBLIC WORK)**

KNOW ALL MEN BY THESE PRESENTS:

THAT WHEREAS, Contra Costa Community College District (sometimes referred to hereinafter as "Obligee") has awarded to _____ (hereinafter designated as the "Principal" or "Contractor"), an agreement for the work described as follows: _____ (hereinafter referred to as the "Public Work"); and

WHEREAS, the work to be performed by the Contractor is more particularly set forth in that certain contract for said Public Work dated _____, (hereinafter referred to as the "Contract"), which Contract is incorporated herein by this reference; and

WHEREAS, the Contractor is required by said Contract to perform the terms thereof and to provide a bond both for the performance and guaranty thereof.

NOW, THEREFORE, we, _____, the undersigned Contractor, as Principal, and _____, a corporation organized and existing under the laws of the State of _____, and duly authorized to transact business under the laws of the State of California, as Surety, are held and firmly bound unto the Contra Costa Community College District in the sum of _____ Dollars (\$ _____), said sum being not less than one hundred percent (100%) of the total amount payable by said Obligee under the terms of said Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the bounded Contractor, his or her heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in said Contract and any alteration thereof made as therein provided, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill guarantees of all materials and workmanship; and indemnify, defend and save harmless the Obligee, its officers and agents, as stipulated in said Contract, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any change, extension of time, alteration in or addition to the terms of the contract or to the work to be performed there under or the specifications accompanying the same, nor by any change or modification to any terms of payment or extension of time for any payment pertaining or relating to any scheme of work of improvement under the contract. Surety also stipulates and agrees that it shall not be exonerated or released from the obligation of this bond (either by total exoneration or pro tanto) by any overpayment or underpayment by the Obligee that is based upon estimates

approved by the Architect. The Surety stipulates and agrees that none of the aforementioned changes, modifications, alterations, additions, extension of time or actions shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, modifications, alterations, additions or extension of time to the terms of the contract, or to the work, or the specifications as well notice of any other actions that result in the foregoing.

Whenever Principal shall be, and is declared by the Obligor to be, in default under the Contract, the Surety shall promptly either remedy the default, or shall promptly complete the Contract through its agents or independent contractors, subject to acceptance and approval of such agents or independent contractors by Obligor as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages; or, at Obligor's sole discretion and election, Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Obligor of the lowest responsible bidder, arrange for a contract between such bidder and the Obligor and make available as Work progresses (even though there should be a default or succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the "balance of the Contract price" (as hereinafter defined), and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term "balance of the Contract price," as used in this paragraph, shall mean the total amount payable to Principal by the Obligor under the Contract and any modifications thereto, less the amount previously paid by the Obligor to the Principal, less any withholdings by the Obligor allowed under the Contract.

Surety expressly agrees that the Obligor may reject any agent or contractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Unless otherwise agreed by Obligor, in its sole discretion, Surety shall not utilize Principal in completing the Contract nor shall Surety accept a bid from Principal for completion of the work in the event of default by the Principal.

No final settlement between the Obligor and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

The Contractor and Surety shall remain responsible and liable for all patent and latent defects that arise out of or are related to the Contractor's failure and/or inability to properly complete the Public Work as required by the Contract and the Contract Documents. The obligation of the Surety hereunder shall continue so long as any obligation of the Contractor remains.

Contractor and Surety agree that if the Obligor is required to engage the services of an attorney in connection with enforcement of the bond, Contractor and Surety shall pay Obligor's reasonable attorneys' fees incurred, with or without suit, in addition to the above sum.

In the event suit is brought upon this bond by the Obligor and judgment is recovered, the Surety shall pay all costs incurred by the Obligor in such suit, including reasonable attorneys' fees to be fixed by the Court.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20_____.

PRINCIPAL/CONTRACTOR:

By: _____

SURETY:

By: _____

Attorney-in-Fact

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

The total amount of premium charged: \$_____ (This must be filled in by a corporate surety).

IMPORTANT: **THIS IS A REQUIRED FORM.**

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code Section 105, and if the work or project is financed, in whole or in part, with federal, grant or loan funds, Surety's name must also appear on the Treasury Department's most current list (Circular 570 as amended).

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of agent or representative
for service for service of process in California)

Telephone: _____

Telephone: _____

SECTION 00510

NOTICE OF AWARD

DATE: _____

TO: _____

ADDRESS: _____

PROJECT: _____

The Contract Sum of your contract is _____ Dollars,
(\$_____).

You must comply with the following conditions within **ten (10)** calendar days of the date of this Notice of Award, that is, by _____.

1. You must deliver to the District two fully executed counterparts of Section 00600, "Construction Agreement."
2. You must deliver to the District the "Contract Performance Bond," and "Payment Bond," executed by you and your surety, which are included in Section 00500.
3. You must deliver to District the insurance certificates required in Section 00800, for insurance required in Section 00600, Construction Agreement.

Failure to comply with these conditions within the time specified will entitle District to consider your bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited. Within **ten (10)** calendar days after you comply with these conditions, the District will return to you one fully signed counterpart of the Construction Agreement.

Contra Costa Community College District

By: _____

Title: _____

END OF DOCUMENT

SECTION 00600

CONSTRUCTION AGREEMENT

CONTRACT NO. _____
(Construction Agreement)

=====

This Agreement shall not be enforceable until ratified and approved by the Contra Costa Community College District's Governing Board. The estimated board meeting date is **September 14, 2022**.

(§1.1) Parties: (Public Agency) **CONTRA COSTA COMMUNITY COLLEGE DISTRICT**
500 Court St, Martinez, CA 94553

Contractor _____
Address: _____

(§1.2) Effective Date: See Article 1.4, below.

(§1.3) The Work: **L-1203 Votech Roof Replacement, Los Medanos College**

(§1.4) Completion Time: **325 Calendar Days** from the Notice to Proceed to Substantial Completion, and **30 Calendar Days** from Substantial Completion to Final Completion (Remaining Work).

(§1.5.1) Liquidated Damages, Substantial Completion: **\$1000** per Calendar Day beyond the Contract Substantial Completion Date.

(§1.5.2) Liquidated Damages, Remaining Work/Final Completion: **\$500** per calendar day Remaining Work is delayed beyond the Contract Final Completion Date.

(§1.6) Public Agency's Agent: **CONTRA COSTA COMMUNITY COLLEGE DISTRICT ("District")**

(§1.7) Contract Sum: **xxx THOUSAND DOLLARS and NO CENTS (\$000,000.00)**

2. SCOPE OF WORK:

In general, the Work consists of the following, but not limited to: Abatement and demolition of the existing built-up roof and underlying light weight concrete, installation of new tapered insulation, installation of new modified bitumen and single-ply roof systems, and all related work. See Section 00010, Table of Contents, for a list of all the Contract Documents (specifications and drawings) included in this the scope of work, including addendums issued and referenced in the Contractor's bid form (Section 00300).

3. WORK CONTRACT, CHANGES

- (a) By their signatures below, effective on the above date, these parties promise and agree as set forth in this Agreement, incorporating by these references labor and materials contained in Section 2, Scope of Work.
- (b) Contractor shall, at Contractor's own cost and expense, and in a workmanlike manner, fully and faithfully perform and complete the work; and will furnish all materials, labor, services, equipment, and transportation necessary, convenient and proper in order fairly to perform the requirements of this contract, all strictly in accordance with the Public Agency's- drawings and specifications.
- (c) The work can be changed only with Public Agency's prior written order specifying such change and its cost agreed to by the parties; and the Public Agency shall never have to pay more than specified in Section 1.7 without such an order.

4. TIME: NOTICE TO PROCEED AND ACCEPTANCE

- (a) Contractor shall start this work as directed in the specifications or the Notice to Proceed and shall complete it as specified in Section 1, Completion Time.
- (b) Remaining Work after Substantial Completion. If the Architect or District determines that the work required by the Contract is Substantially Complete during any inspection conducted pursuant to this Agreement or **Specification Section 00800, SUPPLEMENTARY GENERAL CONDITIONS**, the Contractor shall be notified of that determination and the District shall determine if there is Remaining Work. A list of Remaining Work shall be issued only by the District or the Architect and only after the District has certified Substantial Completion. The District or Architect shall give the Contractor the necessary instructions for correction or completion of the Remaining Work, and the Contractor shall immediately comply with and execute such instructions within the Contract Time. Upon completion of the Remaining Work, another inspection shall be made that shall constitute the Final Inspection, provided the Remaining Work has been completed to the satisfaction of the District. If the remaining work has been completed to the satisfaction of the District, the District shall make the final acceptance and notify the Contractor in writing of this acceptance as of the date of Final Inspection.
- (c) Final Acceptance – Upon due notice from the Contractor of completion of the entire project, the District shall make an inspection. If all construction provided for and contemplated by the contract is found to be completed to the District's satisfaction, then that inspection shall constitute the Final Inspection and the District shall notify the Contractor in writing of final acceptance effective as of the date of the Final Inspection.
- (d) Default for failure to Complete Remaining Work In the event the Contract Time expires before the Remaining Work is completed to the satisfaction of the District, the District may provide notice to the Contractor that the Remaining Work shall be completed by Contractor to the satisfaction of the District within ten consecutive calendar days from the date of such notice. The failure of the Contractor to satisfactorily complete the Remaining Work within the ten days shall entitle to District to declare Contractor in default and thereafter terminate the Contract. The ten-day notice provided under this paragraph shall not be construed as adding any time to the Contract Time and is a time period solely for the purposes of providing notice of default.
- (e) Application for Final Payment. After the Contractor has completed all Remaining Work to the satisfaction of the District and delivered all maintenance and operating instructions, schedules, guarantees, warranties, bonds, certificates of inspection, marked-up record documents and other documents as required by the Contract, and after the District or Architect has indicated that the

work is acceptable, Contractor may make application for final payment following the Payments Procedures for progress payments. The final application for payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the District) of all liens arising out of or filed in connection with the work on the project.

- (f) Final Payment and Acceptance. If the Architect determines that the work has been completed and the Contractor's other obligations under the Contract have been fulfilled, the Architect shall, within ten working days after receipt of the final application for payment, indicate in writing the Architect's recommendation of payment and present the application to District for payment. Thereupon the Architect shall prepare a Certificate of Final Completion. Otherwise, Architect shall return the application to Contractor indicating in writing the reasons for refusing to recommend final payment. Contractor shall make the corrections identified in the Architect's refusal to recommend final payment. Thirty days after presentation to District of the application and accompanying documentation, with the Architect's recommendation and notice of acceptability of the work, the amount recommended by Architect shall be come due and payable by District to Contractor.

5. LIQUIDATED DAMAGES

5.1 LIQUIDATED DAMAGES - SUBSTANTIAL COMPLETION

If the Contractor fails to complete this contract and this Work within the time fixed therefore, allowance being made for contingencies as provided herein, Contractor becomes liable to the Public Agency for all its loss and damage there from; and because, from the nature of the case, it is and will be impracticable and extremely difficult to ascertain and fix the Public Agency's actual damage from any delay in performance hereof, it is agreed that Contractor will pay as liquidated damages to the Public Agency the reasonable sum specified in Section 1, the result of the parties' reasonable endeavor to estimate fair average compensation therefore, for each calendar day's delay in finishing said Work; and if the same be not paid, Public Agency may, in addition to its other remedies, deduct the same from any money due or to become due Contractor under this Contract. If the Public Agency for any cause authorizes or contributes to a delay, suspension of work or extension of time, its duration shall be added to the time allowed for completion, but it shall not be deemed a waiver nor be used to defeat any right of the Agency to damages for non-completion or delay hereunder. Pursuant to Government Code Section 4215, the Contractor shall not be assessed liquidated damages for delay in completion of the work, when such delay was caused by the failure of the Public Agency or the owner of a utility to provide for removal or relocation of existing utility facilities.

5.2 LIQUIDATED DAMAGES-THE REMAINING WORK

The Remaining Work, as such work is determined by the Public Agency or Public Agency's Representative, shall be completed within the Contract Time or any proper extension thereof granted by Public Agency. If the Contractor shall neglect, fail or refuse to complete the Remaining Work within the Contract Time or any proper extension thereof granted by the Public Agency, then the Contractor does hereby agree, as part consideration for the awarding of this Contract, to pay to the Public Agency the amount specified in the Contract, not as a penalty but as liquidated damages for the Remaining Work for each such breach of Contract set forth herein for each and every consecutive calendar day that the Contractor shall be in default after expiration of the Contract Time.

6. INTEGRATED DOCUMENTS

The drawings and specifications and special provisions of the Public Agency's Notice Inviting Bids, and Contractor's accepted bid for this work are hereby incorporated into this Contract; and they are intended to cooperate, so that anything exhibited in the drawings and not mentioned in the specifications or special provisions, or vice versa, is to be executed as if exhibited, mentioned and set forth in both, to the true intent and meaning thereof when taken all together; and differences of opinion concerning these shall be finally determined by the Public Agency.

7. PAYMENT

- (a) For strict and literal fulfillment of these promises and conditions, and full compensation for all this work, the Public Agency shall pay the Contractor the sum specified in Section 1, except that in unit price contracts the payment shall be for finished quantities at unit bid prices.
- (b) On or about the first day of each calendar month, the Contractor shall submit to the Public Agency a verified application for payment, supported by a statement showing all materials actually installed during the preceding month, the labor expended thereon, and the cost thereof; whereupon, after checking, the Public Agency shall issue to Contractor a certificate for the amount determined to be due, minus five (5%) percent thereof pursuant to the Public Agency's General Terms and Conditions, but not until defective work and materials have been removed, replaced and made good.

8. PAYMENTS WITHHELD

- (a) The Public Agency or its agent may withhold any payment, or because of later discovered evidence nullify all or any certificate for payment, to such extent and period of time only as may be necessary to protect the Public Agency from loss because of:
 - (1) Defective work not remedied, or work not completed, or
 - (2) Claims filed or reasonable evidence indicating probable filing, or
 - (3) Failure to properly pay subcontractors or for material or labor, or
 - (4) Reasonable doubt that the work can be completed for the balance then unpaid, or
 - (5) Damage to another contractor, or
 - (6) Damage to the Public Agency, other than damage due to delays.
- (b) The Public Agency shall use reasonable diligence to discover and report to the Contractor, as the work progresses, the materials and labor which are not satisfactory to it, so as to avoid unnecessary trouble or cost to the Contractor in making good any defective work or parts.
- (c) Thirty-five (35) calendar days after Public Agency files its notice of completion of the entire work, it shall issue a certificate to the Contractor and pay the balance of the contract sum after deducting all amounts withheld under this contract, provided the Contractor shows that all claims for labor and materials have been paid, no claims have been presented to the Public Agency based on acts or omissions of the Contractor, and no liens or withhold notices have been filed against the work or site, and provided there are not reasonable indications of defective or missing work or of late-recorded notices of liens or claims against Contractor.

9. INSURANCE

Contractor's Liability Insurance: Before the commencement of the Work, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in California as admitted carriers with a financial rating of at least A status as rated in the most recent edition of Best's Insurance Reports or as amended by the Supplementary General Conditions, if any, such insurance as will protect the Public Agency from claims set forth below, which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations are by the Contractor, by a Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

- (a) Claims for damages because of bodily injury, sickness, disease, or death of any person District would require indemnification and coverage for employee claim;
- (b) Claims for damages insured by usual personal injury liability coverage, which are sustained by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor or by another person;
- (c) Claims for damages because of injury or destruction of tangible property, including loss of use resulting therefrom, arising from operations under the Contract Documents;
- (d) Claims for damages because of bodily injury, death of a person, or property damage arising out of the ownership, maintenance, or use of a motor vehicle, all mobile equipment, and vehicles moving under their own power and engaged in the Work;
- (e) Claims involving contractual liability applicable to the Contractor's obligations under the Contract Documents, including liability assumed by and the indemnity and defense obligations of the Contractor and the Subcontractors; and
- (f) Claims involving Completed Operations, Independent Contractors' coverage, and Broad Form property damage, without any exclusions for collapse, explosion, demolition, underground coverage, and excavating. (XCU)
- (g) Claims involving sudden or accidental discharge of contaminants or pollutants.

Subcontractor Insurance Requirements: The Contractor shall require its Subcontractors to take out and maintain similar public liability insurance and property damage insurance as required under the above paragraph, titled "Contractor's Liability Insurance, in amounts commensurate with the value of the subcontract. A "claims made" or modified "occurrence" policy shall not satisfy the requirements of the above paragraph, titled "Contractor's Liability Insurance, without prior written approval of the District.

Additional Insured Endorsement Requirement: The Contractor shall name, on any policy of insurance, the District, Architect, Inspector, the State of California, their officers, employees, agents and independent contractors as Additional Insured. Subcontractors shall name the Contractor, the District, Architect, Inspector, the State of California, their officers, employees, agents and independent contractors as Additional Insured.

The Additional Insured Endorsement included on all such insurance policies shall state that coverage is afforded the additional insured with respect to claims arising out of operations performed by or on behalf of the insured. If the Additional Insured have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The insurance provided by the Contractor

must be designated in the policy as primary to any insurance obtained by the Public Agency. The amount of the insurer's liability shall not be reduced by the existence of such other insurance.

Workers' Compensation Insurance: During the term of this Contract, the Contractor shall provide workers' compensation insurance for all of the Contractor's employees engaged in Work under this Contract on or at the Site of the Project and, in case any of the Contractor's Work is subcontracted, the Contractor shall require the Subcontractor to provide workers' compensation insurance for all the Subcontractor's employees engaged in Work under the subcontract. Any class of employee or employees not covered by a Subcontractor's insurance shall be covered by the Contractor's insurance. In case any class of employees engaged in Work under this Contract on or at the Site of the Project is not protected under the Workers' Compensation laws, the Contractor shall provide or cause a Subcontractor to provide adequate insurance coverage for the protection of those employees not otherwise protected. The Contractor shall file with the District certificates of insurance as required under Section 00700, Article 11.6, and in compliance with Labor Code § 3700.

Specific Insurance Requirement: Contractor shall take out and maintain and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain:

(a) Workers' Compensation Insurance: \$1,000,000.00; Contractor is aware of and complies with Labor Code Section 3700 and the Worker's Compensation Law.

(b) Comprehensive General Liability Insurance with a combined single limit per occurrence of not less than \$1,000,000.00 and \$2,000,000.00 project specific aggregate, or Commercial General Liability Insurance (including automobile insurance) which provides limits of not less than:

(1)	Per occurrence (combined single limit)	\$1,000,000.00
(2)	Project Specific Aggregate (for this project only)	\$2,000,000.00
(3)	Products and Completed Operations	\$1,000,000.00

(c) Insurance Covering Special Hazards

The following Special hazards shall be covered by riders or riders to above mentioned public liability insurance or property damage insurance policy or policies of insurance, in amounts as follows:

(1)	Automotive and truck where operated in amounts	\$1,000,000.00
(2)	Material Hoist where used in amounts	\$1,000,000.00
(3)	Explosion, Collapse and Underground (XCU coverage)	\$1,000,000.00

(d) In addition, provide Excess Liability Insurance coverage in the amount of Two Million Dollars (\$2,000,000.00).

Builder's Risk/ "All Risk" Insurance/Course-of-Construction Insurance Requirements: The Contractor, during the progress of the Work and until final acceptance of the Work by District upon completion of the entire Contract, shall maintain Builder's Risk, Course of Construction or similar first party property coverage issued on a replacement cost value basis consistent with the total replacement cost of all insurable Work and the Project included within the Contract Documents. Coverage is to insure against all risks of accidental direct physical loss, and must include, by the basic grant of coverage or by endorsement, the perils of vandalism, malicious mischief (both without any limitation regarding vacancy or occupancy), fire, sprinkler leakage, civil authority, sonic boom, earthquake, flood, collapse, wind,

lightning, smoke and riot. The coverage must include debris removal, demolition, increased costs due to enforcement of building ordinance and law in the repair and replacement of damage and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project which is the subject of the Contract Documents, including completed Work and Work in progress, to the full insurable value thereof. Such insurance shall include the District and the Architect as additional named insureds, and any other person with an insurable interest as designated by the District.

The Contractor shall submit to the District for its approval all items deemed to be uninsurable. The risk of the damage to the Work due to the perils covered by the "Builder's Risk/All Risk" Insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the surety, and no claims for such loss or damage shall be recognized by the District nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

10. BONDS

Bond Requirements: Prior to commencing any portion of the Work, the Contractor shall furnish separate payment and performance bonds for its portion of the Work which shall cover 100% faithful performance of and payment of all obligations arising under the Contract Documents and/or guaranteeing the payment in full of all claims for labor performed and materials supplied for the Work. All bonds shall be provided by a corporate surety authorized and admitted to transact business in California as sureties.

To the extent, if any, that the Contract Sum is increased in accordance with the Contract Documents, the Contractor shall, upon request of the Public Agency, cause the amount of the bonds to be increased accordingly and shall promptly deliver satisfactory evidence of such increase to the Public Agency. To the extent available, the bonds shall further provide that no change or alteration of the Contract Documents (including, without limitation, an increase in the Contract Sum, as referred to above), extensions of time, or modifications of the time, terms, or conditions of payment to the Contractor will release the surety. If the Contractor fails to furnish the required bonds, the Public Agency may terminate the Contract for cause.

On signing this contract, Contractor shall deliver to Public Agency for approval good and sufficient bonds with sureties, in amount(s), specified in the specifications or special provisions, guaranteeing faithful performance of this contract and payment for all labor and materials hereunder.

Surety Qualifications: Only bonds executed by admitted Surety insurers as defined in Code of Civil Procedure § 995.120 shall be accepted. Surety must be a California-admitted surety and listed by the U.S. Treasury with a bonding capacity in excess of the Project cost.

Alternate Surety Qualifications: If a California-admitted surety insurer issuing bonds does not meet these requirements, the insurer will be considered qualified if it is in conformance with § 995.660 of the California Code of Civil Procedure and proof of such is provided to the District.

11. FAILURE TO PERFORM

If the Contractor at any time refuses or neglects, without fault of the Public Agency or its agent(s), to supply sufficient materials or workers to complete this agreement and work as provided herein, for a

period of ten days or more after written notice thereof by the Public Agency, the Public Agency may furnish same and deduct the reasonable expenses thereof from the contract price.

12. LAWS APPLY: General

Both parties recognize the applicability of various federal, state and local laws and regulations, especially Chapter 1 of Part 7 of the California Labor Code (beginning with Section 1720, and including Sections 1735, 1777.5, 1777.6, forbidding discrimination) and intend that this agreement complies therewith. The parties specifically stipulate that the relevant penalties and forfeitures provided in the Labor Code, especially in Sections 1775, 1776, and 1813, concerning prevailing wages and hours, shall apply to this agreement as though fully stipulated herein.

13. SUBCONTRACTORS

Public Contract Code Sections 4100-4113 are incorporated herein.

14. WAGE RATES

- (a) Pursuant to Labor Code Section 1773, the Director of the Department of Industrial Relations has ascertained the general prevailing rates of wages per diem, and for holiday and overtime work, in the locality in which this work is to be performed, for each craft, specified in the call for bids for this work and are on file with the Public Agency, and are hereby incorporated herein.
- (b) This schedule of wages is based on a working day of eight (8) hours unless otherwise specified; and the daily rate is the hourly rate multiplied by the number of hours constituting the working day. When less than that number of hours are worked, the daily wage rate is proportionately reduced, but the hourly rate remains as stated.
- (c) The Contractor, and all subcontractors, must pay at least these rates to all persons on this work, including all travel, subsistence, and fringe benefit payments provided for by applicable collective bargaining agreements. All skilled labor not listed above must be paid at least the wage scale established by collective bargaining agreement for such labor in the locality where such work is being performed. If it becomes necessary for the Contractor or any subcontractor to employ any person in a craft, classification or type of work (except executive, supervisory, administrative, clerical or other non-manual workers as such) for which no minimum wage rate is specified, the contractor shall immediately notify the Public Agency which shall promptly determine the prevailing wage rate therefore and furnish the Contractor with the minimum rate based thereon, which shall apply from the time of the initial employment of the person affected and during the continuance of such employment.

15. HOURS OF LABOR

Eight hours of labor in one calendar day constitutes a legal day's work, and no worker employed at any time on this work by the Contractor or by any subcontractor shall be required or permitted to work longer thereon except as provided in Labor Code Sections 1810-1815.

16. APPRENTICES

Properly indentured apprentices may be employed on this work in accordance with Labor Code Sections 1777.5 and 1777.6, forbidding discrimination.

17. PREFERENCE FOR MATERIALS

The Public Agency desires to promote the industries and economy of Contra Costa County, and the Contractor therefore promises to use the products, workers, laborers and mechanics of this County in every case where the price, fitness and quality are at least equal.

18. ASSIGNMENT

This agreement binds the heirs, successors, assigns, and representatives of the Contractor; but Contractor cannot assign it in whole or in part, nor any monies due or to become due under it, without the prior written consent of the Public Agency and the Contractor's surety or sureties, unless they have waived notice of assignment.

19. NO WAIVER BY PUBLIC AGENCY

Inspection of the work and/or materials, or approval of work and/or materials inspected, or statement by any officer, agent or employee of the Public Agency indicating the work or any part thereof complies with the requirements of this contract, or acceptance of the whole or any part of said work and/or materials, or payments therefore, or any combination of these acts, shall not relieve the Contractor of Contractor's obligation to fulfill this contract as prescribed; nor shall the Public Agency be thereby stopped from bringing any action for damages or enforcement arising from the failure to comply with any of the terms and conditions hereof.

20. HOLD HARMLESS AND INDEMNITY

- (a) Contractor promises to and shall hold harmless and indemnify from the liabilities as defined in this section.
- (b) The indemnities benefited and protected by this promise are the Public Agency and its elective and appointive boards, commissions, officers, agents and employees.
- (c) The liabilities protected against are any liability or claim for damage of any kind allegedly suffered, incurred or threatened because of actions defined below, including personal injury, death, property damage, inverse condemnation, or any combination of these, regardless of whether or not such liability, claim or damage was unforeseeable at any time before the Public Agency approved the improvement plan or accepted the improvements as completed, and including the defense of any suit(s) or action(s) at law or equity concerning these.
- (d) The actions causing liability are any act or omission (negligent or non-negligent) in connection with the matters covered by this contract and attributable to the contractor, subcontractor(s), or any officer(s), agent(s), or employee(s) of one or more of them.
- (e) Non-conditions: The promise and agreement in this section is not conditioned or dependent on whether or not any Indemnities has prepared, supplied, or approved any plan(s), drawing(s),

specifications(s) or special provision(s) in connection with this work, has insurance or other indemnification covering any of these matters, or that the alleged damage resulted partly from any negligent or willful misconduct of any Indemnities.

21. EXCAVATION

Contractor shall comply with the provisions of Labor Code Section 6705, if applicable, by submitting to Public Agency 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 trench excavation.

22. GOVERNMENT CODE SECTION 10532

Contractor shall be subject to the examination and audit of the Auditor General for a period of three years after final payment under the contract.

23. WARRANTY

- (a) In addition to any other warranties or guaranties in the Contract Documents, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.
- (b) This warranty shall continue for a period of 1 year from the date of final acceptance of the Work or Phase of Work, unless otherwise provided or extended in the Contract Documents. If the District takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the District takes possession.
- (c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to District-owned or controlled real or personal property, when that damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defect of equipment, material, workmanship, or design furnished.
- (d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year or as otherwise provided or extended from the date of repair or replacement.
- (e) The District shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.
- (f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the District shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall—
 - (1) Obtain all warranties that would be given in normal commercial practice;

- (2) Require all warranties to be executed, in writing, for the benefit of the District, if directed by the District; and
 - (3) Enforce all warranties for the benefit of the District, if directed by the District.
- (h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the District may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.
- (i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the District nor for the repair of any damage that results from any defect in District-furnished material or design.
- (j) This warranty shall not limit the District's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

24. CONSEQUENTIAL DAMAGES

The Contractor and Public Agency waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- (a) Damages incurred by the Public Agency for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- (b) Damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination. Nothing contained in this subparagraph shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

25. HAZARDOUS MATERIALS

- (a) If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos, lead or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Public Agency in writing.
- (b) The Public Agency shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. The Public Agency shall furnish in writing to the Contractor the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written notification from the Public Agency and Contractor. The Contract Time shall be extended appropriately.

26. SAFETY

- (a) **Safety Programs.** In addition to and as required by other Sections of the Contract Documents, the Contractor shall be solely responsible for initiating, maintaining and supervising all safety programs required by applicable law, ordinance, regulation or governmental orders in connection with the performance of the Contract, or otherwise required by the type or nature of the Work. The Contractor's safety program shall include all actions and programs necessary for compliance with California or federally statutorily mandated workplace safety programs, including without limitation, compliance with the California Drug Free Workplace Act of 1990 (California Government Code §§8350 et seq.). Without limiting or relieving the Contractor of its obligations hereunder, the Contractor shall require that its Subcontractors similarly initiate and maintain all appropriate or required safety programs. Prior to commencement of Work, the Contractor shall meet with the Campus Buildings and Grounds Manager, Project Manager, and Construction Manager to review Contractor's safety precautions and implementation of safety programs during the Work.
- (b) **Safety Precautions.** In addition to and as required by other Sections of the Contract Documents, the Contractor shall be solely responsible for initiating and maintaining reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (i) employees on the Work and other persons who may be affected thereby; (ii) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and (iii) other property or items at the site of the Work, or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall take adequate precautions and measures to protect existing roads, sidewalks, curbs, pavement, utilities, adjoining property and improvements thereon (including without limitation, protection from settlement or loss of lateral support) and to avoid damage thereto. Without adjustment of the Contract Price or the Contract Time, the Contractor shall repair, replace or restore any damage or destruction of the foregoing items as a result of performance or installation of the Work.
- (c) **Safety Signs, Barricades.** In addition to and as required by other Sections of the Contract Documents, the Contractor shall erect and maintain, as required by existing conditions and conditions resulting from performance of the Contract, reasonable safeguards for safety and protection of property and persons, including, without limitation, posting danger signs and other warnings against hazards, promulgating safety regulations and notifying Districts and users of adjacent sites and utilities.
- (d) **Safety Notices.** In addition to and as required by other Sections of the Contract Documents, the Contractor shall give or post all notices required by applicable law and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

27. SIGNATURES AND ACKNOWLEDGEMENT

Public Agency, By: _____
Amy Sterry, Director of Purchasing and Contracts

Note to Contractor: (1) Execute acknowledgement form below, and (2) if a corporation, affix Corporate Seal.

Contractor hereby also acknowledging awareness of and compliance with Labor Code S1861 concerning Worker's Compensation Law.

Contractor:
By: _____ (CORPORATE SEAL)
(Designate Official Capacity) **NAME**

Print NAME and TITLE

License Number

Federal ID Number

NOTARY PUBLIC

=====

State of California)ss. ACKNOWLEDGEMENT (By Corporation, Partnership or
Individual)
County of Contra Costa)

The person(s) signing above for Contractor, known to me in individual and business capacity as stated, personally appeared before me today and acknowledged that he/she/they executed it and that the corporation or partnership named above executed it.

Dated: _____

(NOTARIAL SEAL)

END OF SECTION 00600

Appendix B-1

Small Construction Project Safety Protocol

1. Any construction project meeting any of the following specifications is subject to this Small Construction Project Safety Protocol (“SCP Protocol”), including public works projects unless otherwise specified by the Health Officer:
 - a. For residential projects, any single-family, multi-family, senior, student, or other residential construction, renovation, or remodel project consisting of 10 units or less. This SCP Protocol does not apply to construction projects where a person is performing construction on their current residence either alone or solely with members of their own household.
 - b. For commercial projects, any construction, renovation, or tenant improvement project consisting of 20,000 square feet of floor area or less.
 - c. For mixed-use projects, any project that meets both of the specifications in subsection 1.a and 1.b.
 - d. All other construction projects not subject to the Large Construction Project Safety Protocol set forth in Appendix B-2.
2. The following restrictions and requirements must be in place at all construction job sites subject to this SCP Protocol:
 - a. Comply with all applicable and current laws and regulations including but not limited to OSHA and Cal-OSHA. If there is any conflict, difference, or discrepancy between or among applicable laws and regulations and/or this SCP Protocol, the stricter standard shall apply.
 - b. Designate a site-specific COVID-19 supervisor or supervisors to enforce this guidance. A designated COVID-19 supervisor must be present on the construction site at all times during construction activities. A COVID-19 supervisor may be an on-site worker who is designated to serve in this role.
 - c. The COVID-19 supervisor must review this SCP Protocol with all workers and visitors to the construction site.
 - d. Establish a daily screening protocol for arriving staff to ensure that potentially infected staff do not enter the construction site. If workers leave the jobsite and return the same day, establish a cleaning and decontamination protocol prior to entry and exit of the jobsite. Post the daily screening protocol at all entrances and exits to the jobsite. More information on screening can be found online at: <https://www.cdc.gov/coronavirus/2019-ncov/community/index.html>.
 - e. Practice social distancing by maintaining a minimum six-foot distance between workers at all times, except as strictly necessary to carry out a task associated with the construction project.



Appendix B-1

- f. Where construction work occurs within an occupied residential unit, separate work areas must be sealed off from the remainder of the unit with physical barriers such as plastic sheeting or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative entry/exit door to the entry/exit door used by residents. Available windows and exhaust fans must be used to ventilate the work area. If residents have access to the work area between workdays, the work area must be cleaned and sanitized at the beginning and at the end of workdays. Every effort must be taken to minimize contact between workers and residents, including maintaining a minimum of six feet of social distancing at all times.
- g. Where construction work occurs within common areas of an occupied residential or commercial building or a mixed-use building in use by on-site employees or residents, separate work areas must be sealed off from the rest of the common areas with physical barriers such as plastic sheeting or closed doors sealed with tape to the extent feasible. If possible, workers must access the work area from an alternative building entry/exit door to the building entry/exit door used by residents or other users of the building. Every effort must be taken to minimize contact between worker and building residents and users, including maintaining a minimum of six feet of social distancing at all times.
- h. Prohibit gatherings of any size on the jobsite, including gatherings for breaks or eating, except for meetings regarding compliance with this protocol or as strictly necessary to carry out a task associated with the construction project.
- i. Cal-OSHA requires employers to provide water, which should be provided in single-serve containers. Sharing of any of any food or beverage is strictly prohibited and if sharing is observed, the worker must be sent home for the day.
- j. Provide personal protective equipment (PPE) specifically for use in construction, including gloves, goggles, face shields, and face coverings as appropriate for the activity being performed. At no time may a contractor secure or use medical-grade PPE unless required due to the medical nature of a jobsite. Face coverings must be worn in compliance with Section 5 of the Health Officer's Order No. HO-COVID19-08, dated April 17, 2020, or any subsequently issued or amended order.
- k. Strictly control "choke points" and "high-risk areas" where workers are unable to maintain six-foot social distancing and prohibit or limit use to ensure that six-foot distance can easily be maintained between individuals.
- l. Minimize interactions and maintain social distancing with all site visitors, including delivery workers, design professional and other project consultants, government agency representatives, including building and fire inspectors, and residents at residential construction sites.



Appendix B-1

- m. Stagger trades as necessary to reduce density and allow for easy maintenance of minimum six-foot separation.
- n. Discourage workers from using others' desks, work tools, and equipment. If more than one worker uses these items, the items must be cleaned and disinfected with disinfectants that are effective against COVID-19 in between use by each new worker. Prohibit sharing of PPE.
- o. If hand washing facilities are not available at the jobsite, place portable wash stations or hand sanitizers that are effective against COVID-19 at entrances to the jobsite and in multiple locations dispersed throughout the jobsite as warranted.
- p. Clean and sanitize any hand washing facilities, portable wash stations, jobsite restroom areas, or other enclosed spaces daily with disinfectants that are effective against COVID-19. Frequently clean and disinfect all high touch areas, including entry and exit areas, high traffic areas, rest rooms, hand washing areas, high touch surfaces, tools, and equipment
- q. Maintain a daily attendance log of all workers and visitors that includes contact information, including name, phone number, address, and email.
- r. Post a notice in an area visible to all workers and visitors instructing workers and visitors to do the following:
 - i. Do not touch your face with unwashed hands or with gloves.
 - ii. Frequently wash your hands with soap and water for at least 20 seconds or use hand sanitizer with at least 60% alcohol.
 - iii. Clean and disinfect frequently touched objects and surfaces such as work stations, keyboards, telephones, handrails, machines, shared tools, elevator control buttons, and doorknobs.
 - iv. Cover your mouth and nose when coughing or sneezing, or cough or sneeze into the crook of your arm at your elbow/sleeve.
 - v. Do not enter the jobsite if you have a fever, cough, or other COVID-19 symptoms. If you feel sick, or have been exposed to anyone who is sick, stay at home.
 - vi. Constantly observe your work distances in relation to other staff. Maintain the recommended minimum six feet at all times when not wearing the necessary PPE for working in close proximity to another person.
 - vii. Do not carpool to and from the jobsite with anyone except members of your own household unit, or as necessary for workers who have no alternative means of transportation.
 - viii. Do not share phones or PPE.



SECTION 00650

NOTICE TO PROCEED

Date: _____

TO: _____

ADDRESS: _____

PROJECT: _____

You are notified that the Contract Time under the above contract will commence to run on _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Section 00600, Construction Agreement, the date of Substantial Completion is _____, and the date for Final Completion is _____.

CONTRA COSTA COMMUNITY COLLEGE DISTRICT

By : _____

Ben Cayabyab
Contracts Manager

END OF DOCUMENT

SECTION 00800
SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 SCOPE OF WORK

In general, the Work consists of the following, but not limited to: Abatement and demolition of the existing built-up roof and underlying light weight concrete, installation of new tapered insulation, installation of new modified bitumen and single-ply roof systems, and all related work.. See Section 00010, Table of Contents, for a list of all the Contract Documents (specifications) included in this the scope of work, including addendums issued and referenced in the Contractor's bid form (Section 00300).

1.2 REFERENCES

A. The publications listed below form a part of this specification by reference.

1. Current California Occupational Safety and Health Act Regulations
2. Current California Occupational Safety and Health Construction Safety Orders
3. This work will be contracted using the District's Construction Agreement; See Section 00600.

1.3 SUBMITTALS

A. Provide submittals in the format, and as described below:

1. **Submittals shall be submitted to the District, electronically, in PDF format, within fourteen (14) Calendar Days from the Notice to Proceed, except as otherwise noted.**
2. ~~N/A~~
3. Submittals that require local and State agency approval, shall conform to this Specification and the requirements of the local or State agency.
4. **District will review and provide a response to submittals within fourteen (14) calendar days (excluding holidays).** Submittals that include design documents prepared by a licensed California Engineer will be submitted for the District's records. Any District review and response to the Contractor's design documents by a licensed California Engineer will be for format and general compliance only. Contractor and Contractor's licensed California Engineer are responsible for compliance with all applicable State of California codes, laws and regulations applicable to this project.

B. Provide submittals for all equipment, if any, listed on the Drawings or in the Specifications.

C. The Schedule of Values shall be submitted to the District within seven (7) calendar days after the Notice of Award. The Schedule of Values shall be broken down by the following minimum categories:

1. Submittals
2. Material Procurement
3. Demolition
4. Insulation installation
5. Roofing Installation
6. Owner and Maintenance Manuals and Warranties
7. As-Builts / Project Record Documents

The District will only pay for Work installed at the Site.

- D.** CPM construction schedule shall be submitted as a Microsoft Project file within **ten (10) calendar days** from the Contract Award date. District and Contractor shall meet and review the schedule. The Notice to Proceed will not be issued until the District accepts the schedule or accepts it with conditional changes. Below are the minimum activity types that shall be included in the schedule:

1. Contractor Submittals
2. Submittal Reviews by District
3. Procurement
4. Construction activities corresponding to the Schedule of Values
5. Substantial Completion Milestone
6. Project Closeout Activities.
7. Final Completion Milestone

- E.** Submittals are for review of conformance with the requirements of the Contract.

1.4 SUBSTITUTIONS.

- A.** *One Product Specified.* Unless the Specifications state that no substitution is permitted, whenever the Contract Documents indicate any specific material, product, thing or service, or any specific name, make, trade name, or catalog number, with or without the words "or equal," such specification shall be deemed to be used for the purpose of facilitating description of the material, product, thing or service desired and shall be deemed to be followed by the words "or equal" unless the Contract Documents specify "no substitution allowed", "no equal", "no equivalent", or other language with similar meaning, in which case no substitutions will be allowed. Pursuant to Paragraph 1.3.F.3, the Contractor may, unless otherwise stated, within three (3) work days after the bid opening, submit a substitution request for any material, product, thing or service, which shall be materially equal or better in every respect to that so indicated or specified ("Specified Item") and will completely accomplish the purpose of the Contract Documents.

1. *Products Specified which are Commercially Unavailable.* If the Contractor fails to make a request for substitutions for products, within three (3) work days after bid opening, and such products subsequently become commercially unavailable, the Contractor may request a substitution for such commercially unavailable item. The decision to grant this request is solely at the District's discretion. The written approval of the District, consistent with the procedure for Change Orders, shall be required for the use of a proposed substitute material. The District may condition its approval of the substitution upon the delivery to District of an extended warranty or guaranty or other assurances of adequate performance of the substitution as well as an equitable deduction in the contract sum should the substituted item cost less than the Specified Item. All risks of delay due the approval of a requested substitution by the District, DSA, or any other governmental agency having jurisdiction, shall be on the requesting party. All additional costs, all procurement and construction delays, and all costs for review by the Architect or its consultants shall be the responsibility of the Contractor and will be deducted from Contractor's pay request.

B. Substitution Request Form. Requests for substitutions of materials, products, things or services in place of a Specified Item must be submitted to the District in writing on the District's Substitution Request Form ("Request Form") within three (3) work days after bid opening, except as provided for in Paragraph 1.3.F.1.

1. The Substitution Request Form must be accompanied by evidence as to whether the proposed substitution:
 - (a) Is equal in quality/service/ability to the Specified Item;
 - (b) Will entail no changes in detail, construction, and scheduling of related work;
 - (c) Will be acceptable in consideration of the required design and artistic effect;
 - (d) Will provide no cost disadvantage to the District;
 - (e) Will require no excessive or more expensive maintenance, including adequacy and availability of replacement parts; and
 - (f) Will required no change of the construction schedule.
2. In completing the Substitution Request Form, the bidder shall state, with respect to each requested substitution, that the bidder will agree to provide the Specified Item in the event that the District denies the bidder's request for such requested substitution. In the event the District denies the bidder's requested substitution for a Specified Item, the bidder shall provide the Specified Item without any additional cost or charge to the District and waives all rights to submit a claim.

C. After Bid Opening. After bids are opened, the apparent lowest bidder shall provide, within three (3) days of opening such bids, any and all Drawing, Specifications, samples, performance data, calculations, and other information, as may be required to assist the Design Consultant and the District in determining whether the proposed substitution is acceptable. The burden of establishing these facts shall be upon the bidder.

1. After the District's receipt of such evidence by the bidder, the District will make its final decision as to whether the bidder's request for substitution for any Specified Items will be granted. The decision as to whether a proposed request for

substitution is equal to a Specified Item shall be at the sole discretion of the District. Any request for substitution that is granted by the District shall be documented and processed through a Change Order. The District may condition its approval of any substitution upon delivery to the District of an extended warranty or guaranty or other assurances of adequate performance of the substitution. Any and all risks of delay due to approval by the District, DSA or any other governmental agency having jurisdiction shall be on the bidder.

2. If the Design Consultant and District accept a proposed substitution, the Contractor agrees to pay for all District expenses, including but not limited to Division of the State Architect fees, engineering and design services, compensation to the Design Consultant for their required time to process such substitution through the Division of the State Architect, if required, and to make all changes and adjustments in materials or the work of all trades directly or indirectly affected by the substituted item or items at no cost to the District

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Contractor Provided Materials: The Contractor provided materials shall include any associated equipment and appurtenances required for performing the contract properly and in accordance with the equipment manufacturer's literature.
- B. All materials shall be new, unless otherwise authorized or specified in the scope of work of this specification.

PART 3 - EXECUTION AND RELATED REQUIREMENTS

3.1 GENERAL

- A. **Work Restrictions:** Contractor shall maintain a safe path of travel for all pedestrians and vehicles during construction. Contractor is required to provide safety barricades and alternative routes of travel for pedestrians and vehicles at all times, unless otherwise approved by the District. Anytime the Contractor anticipates it will block and divert existing paths of travel for pedestrians or vehicles, it shall provide a hard copy plan along with proposed wayfinding signage for review by the District at least 5 work days prior to such blockage and diversion. Said plan shall be reviewed and approved by the District prior to commencement of this work by the Contractor.
 1. The contract duration accounts for the material lead time for tapered insulation.
 2. Demolition and Construction cannot start onsite until the beginning of Summer Break on May 22, 2023.
 - a. Construction must be completed by end of Summer Break August 18, 2023.

- B. Contractor shall provide barricades, wayfinding signage, safety signage, and COVID-19 signage around the construction site through Substantial Completion to deter access by students, faculty, and the public to areas under the control of the Contractor.
- C. Contractor will be allowed to have access and use Campus utilities for temporary water and electricity, but Contractor shall be responsible to investigate prior to bid, and for all work necessary to connect to existing utilities for temporary use.
- D. Contractor shall control all construction-generated dust during construction, and clean-up said dust and debris daily to prevent migration to other areas or rooms.
- E. Scheduling and Coordination: Before commencing work on a specific area, the Contractor shall confirm that all requirements have been met pertaining to scheduling of the work. The Contractor shall further determine that all required written notices have been given to the District.
- F. Scheduling and Sequence of Work: The work shall be prosecuted in such a manner as to cause the least interference with the normal functions of the campus activity in the adjacent areas. Prior to beginning any work, the Contractor shall meet with the District and the Contractor's schedule shall be approved as noted in Article 1.3D above.
- G. Interruption of Utilities Services: Interruptions shall be kept to a minimum and shall be at such times and duration as approved ahead of time by the District. No interruption shall occur unless scheduled with the District and approved in advance in writing as to time and duration of such interruption. No utility interruptions that impact building operation during classes will be allowed, and these types of interruptions, if any, shall be scheduled for after normal hours when classes are not in session.
- H. Material, equipment, tools and workmen shall be scheduled and delivered to the Site in a timely manner to avoid delay in the work. Materials provided shall be inspected by the Contractor to make certain they follow the specifications and are free from defects and damage.
- I. Measurements: Before fabrication, obtain necessary field measurements and verify all measurements.
- J. **Bathroom Facilities: The Contractor will NOT be allowed to use College bathroom facilities and the Contractor shall provide porta-potties and cleaning stations to wash hands for construction personnel located at the Site. The location shall be approved in writing by the District before locating the porta-potties.**
- K. Workmanship: Skilled personnel shall execute in a careful, neat, and proficient manner and in compliance with accepted trade practices for all work. All work shall be executed in

accordance with Cal/OSHA standards and safety orders. And all work on this contract shall comply with all Local, State, and Federal Environmental Laws.

L. Incidental Work: Minor incidental materials and work not specifically mentioned herein, but necessary for the proper completion of the specified work, shall be provided without additional cost to the District

M. Administrative Forms: District shall provide its standard forms for use by Contractor.

3.2 EXISTING CONDITIONS & DRAWINGS

A. See Section 00210, Information Available to Bidders for documents available for review by the Contractor and its subcontractors prior to and after bid.

3.3 WORK BY CALIFORNIA LICENSED ENGINEER

A. Note that modifications to existing building structures, fire systems, or ADA changes, if any are discovered during construction, will require DSA approval. Contractor will be granted a non-compensable time extension for the duration it takes to obtain DSA approval. A change order will be negotiated for added direct labor field construction costs, if any.

3.4 NOISE CONTROL

A. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to building occupants.

1. Notify District's Representative not less than two days in advance of proposed disruptive operations.
2. Obtain District's Representative's written permission before proceeding with disruptive operations.

3.5 SITE WORK-Not Used

3.6 PROJECT CLOSEOUT REQUIREMENTS (After Substantial Completion & Before Final Completion)

- A.** Refer to the Drawings listed in Section 00010, Table of Contents for requirements, and these Supplementary General Conditions.
- B.** Provide final clean-up of Site prior to Final Completion.
- C.** Warranty
 1. The Contractor warrants to the District that material and equipment furnished under the Contract will be of the highest quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Contractor's warranty and guaranty to District includes, but is not limited to the following representations:

- a. In addition to any other warranties and guaranties provided elsewhere, Contractor shall, and hereby does, warrant all Work after the Certificate of Substantial Completion date issued by District and shall repair or replace any or all such work, together with any other work, which may be displaced in so doing that may prove defective in workmanship or materials within a one (1) year period from date of completion as defined in Public Contract Code Section 7107(c) without expense whatsoever to District, ordinary wear and tear, unusual abuse or neglect excepted. District will give notice of observed defects with reasonable promptness. Contractor shall notify District upon completion of repairs.
 - b. In the event of failure of Contractor to comply with above mentioned conditions within one week after being notified in writing, District is hereby authorized to proceed to have defects repaired and made good at expense of Contractor who hereby agrees to pay costs and charges therefore immediately on demand.
 - c. If, in the opinion of the District, defective Work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the District, the District will attempt to give the notice required by this Article. If the Contractor cannot be contacted or does not comply with the District's requirements for correction within a reasonable time as determined by the District, the District may, notwithstanding the provisions of this article, proceed to make such correction or attention which shall be charged against Contractor. Such action by the District will not relieve the Contractor of the guarantee provided in this Article or elsewhere in this Contract.
 - d. This Article does not in any way limit the guarantee on any items for which a longer warranty or guaranty is specified in the **technical specifications** or on any items for which a manufacturer gives a guarantee for a longer period. Contractor shall furnish District all appropriate guaranty or warranty certificates upon completion of the project.
2. Format - All Warranties/Guaranties and shall include:
 - a. Contractor, subcontractor, and equipment supplier shall provide Warranties and Guaranties on their original company letterhead with original signature.
 - b. Contractor shall provide original Warranties and Guaranties. Photocopies, fax and e-mail copies are not acceptable.
 3. Preparation
 - a. Contractor shall obtain warranties and guaranties, executed in duplicate by each applicable and/or responsible subcontractor(s), supplier(s), and manufacturer(s), within fifteen (15) days after Certificate of Substantial Completion date of the applicable Work. **Contractor shall leave date of beginning of time of warranty or guaranty blank until the date of Final Completion is determined by District as detailed in the Technical Specifications.**
 - b. Contractor's Response to Construction Warranty and Guaranty Service Requirements: Following oral or written notification by the District, respond to construction warranty and guaranty service requirements within 24 hours, or earlier in case of emergency.

4. Warranty and/or Guaranty Tags
 - a. At the time of installation of mechanical equipment or other major system elements, tag each warranted or guaranteed item with a durable, oil and water-resistant tag approved by the District. Attached each tag with a copper wire and spray with a silicone waterproof coating. The date of Substantial Completion and the Contractor Authorized signature must remain blank until the date the District makes a determination of Substantial Completion. Show the following information on the tag:

WARRANTY/GUARANTY INFORMATION – [insert project number and name on actual tag]

- a. Type of product/material_____.
- b. Model number_____.
- c. Serial number_____.
- d. Contract number_____.
- e. Warranty/Guaranty period _____ (months) from_____ to_____.
- f. Inspector's signature_____.
- g. Construction Contractor_____.
- Address_____.
- Telephone number_____.
- h. Warranty or Guaranty contact_____.
- Address_____.
- Telephone number_____.
- i. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

3.7 Project As-Built

- A. Contractor shall dedicate one complete full-size set of the Contract Drawings and one complete Project Manual for use in documenting as-built conditions, including but not limited to; RFIs, ASI, PCOs and Change Order.
- B. Contractor shall submit to District in hard copy one original and two copies of all Project As-Built Documents. In addition, one electronic copy shall be submitted to District. District reserves the right to require resubmittal in accordance with these Supplementary General Conditions if the documents are inaccurate or incomplete, or otherwise fail to meet the requirements of these Contract Documents.
- C. Electronic Media Format: Electronic media format for all Project As-Built Documents shall be Adobe PDF, with chapter markers and/or bookmarks inserted in place of the equivalent hard copy section tabs. Electronic copy shall include all tables, charts, drawings, codes and all other matters reflected in hard copies. Electronic media files shall be delivered on a unique CD-ROM or flash drive.

3.8 TIME OF COMPLETION

- A. See Section 00300, Bid Proposal Form for specific requirements to complete the Work. Time requirements are also included in Section 00600, Construction Agreement.
- B. Substantial Completion: The date on which the Work or designated portion thereof, as certified by the District and Architect, is sufficiently complete, in accordance with the

Contract Documents, so the District may occupy or utilize the Work or designated portion thereof for the use for which it is intended.

- C. Remaining Work after Substantial Completion: If the Architect or District determines that the work required by the Contract is Substantially Complete during any inspection conducted pursuant to this Agreement, the Contractor shall be notified of that determination and the District shall determine if there is Remaining Work. A list of Remaining Work shall be issued only by the District or the Architect and only after the District has certified Substantial Completion. The District or Architect shall give the Contractor the necessary instructions for correction or completion of the Remaining Work, and the Contractor shall immediately comply with and execute such instructions within the Contract Time. Upon completion of the Remaining Work, another inspection shall be made that shall constitute the Final Inspection, provided the Remaining Work has been completed to the satisfaction of the District. If the remaining work has been completed to the satisfaction of the District, the District shall make the final acceptance and notify the Contractor in writing of this acceptance as of the date of Final Inspection.
- D. Final Completion: The date when all Work for the total project has been completed in accordance with the terms of the Contract Documents and has been inspected following completion of Work identified in the Punch List Inspection and accepted by the Architect and the District. Final Completion is also sometimes referred to as Final Acceptance.

3.9 ADDITIONAL REQUIREMENTS FOR DSA-APPROVED PROJECTS

- A. All substitutions affecting DSA regulated items shall be considered as a Construction Change Document or Addenda and shall be approved by DSA prior to fabrication and installation, as required by IR A-6 and Section 4-338(c), Part 1. Substitutions shall be for any material, system or product that would otherwise be regulated by DSA.
- B. All Addenda must be signed by **Engineer of Record** and approved by DSA (Section 4-338, Part 1).
- C. The Construction Change Documents (Section 4-338(c), Part 1) must be signed by all the following:
 - 1. A/E of Record
 - 2. Structural Engineer (when applicable)
 - 3. Delegated Professional Engineer (when applicable)
 - 4. DSA



CONTRA COSTA COMMUNITY COLLEGE DISTRICT

500 Court Street, Martinez, CA 94553

SUBSTITUTION REQUEST FORM

Contractor Name: _____
Contract #: _____

RFS #	_____	Date: _____
DSA Application #:	_____	
Campus:	Contra Costa College	
Project No., Name:	_____ _____	

Contractor pursuant to General Conditions submits the proposed items. If the District accepts such items so described, the undersigned may furnish such item with all necessary labor, materials, equipment and incidentals to perform and complete the Work.

Item No.	SPECIFIED ITEM OR DRAWING	SPECIFICATION SECTION	PROPOSED SUBSTITUTION (and name of Subcontractor if different)

CERTIFICATION

Under penalty of perjury under the Laws of California, I certify that the proposed substitution will be readily available, perform adequately the functions and achieve the results called for by the design concept, be similar in substance to that specified, and be suited to the same use as that specified in Contract Documents.

Contractor: _____

(Please print name of company)

Name and Title (print/type)

Contractor Authorized Representative

Date

A. Does the substitution affect dimensions shown on Drawings?
B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?
C. What effect does the substitution have on other trades?
D. Will substitution cause change to Project Schedule, or to critical delivery dates? Add ? Shorten ?
E. Differences between proposed substitution and specified item?
F. What is the Cost Differential including all mark-ups?
G. Are Manufacturer's guarantees for the proposed item the same as for item specified? Explain differences.
H. The undersigned accepts full responsibility for delays caused by redesign of other items of the Work necessitated by substitution.
I. The undersigned states that the function, appearance and quality are equivalent or superior to the specified item.

A/E Response:

- ☐ Accepted
- ☐ Not Accepted
- ☐ Accepted As Noted
- ☐ Received Too Late

BY: _____ Date: _____

District Representative Response:

- ☐ Accepted
- ☐ Not Accepted
- ☐ Accepted As Noted
- ☐ Received Too Late

By: _____ Date: _____

END OF SECTION 00800

SECTION 02 41 05

ROOF-RELATED SELECTIVE DEMOLITION

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Demolition of and removal of roof systems and underlying light-weight topping slab.
- B. Demolition of and removal of exterior finishes to perform the roof installation.
- C. Protection of building interiors from dirt, dust and damage.

1.02 RELATED SECTIONS

- A. Division 1 – General Requirements.
- B. Section 02 82 00 Asbestos Abatement and Disposal

1.03 SPECIAL JOB CONDITIONS

- A. Roofing, exterior wall finish and sealant that is removed shall be made watertight and secure in the same day's operation.
- B. Contractor will verify roof demolition scope with the Construction Manager and/or Architect/Engineer prior to the start of work.
- C. The site will be occupied and in use during the work.
- D. The Contractor will be responsible for the building watertightness after the existing roofs are removed.

1.04 SUBMITTALS

- A. The Contractor shall submit a detailed demolition plan to the Construction Manager, outlining the means and methods to be utilized in the removal, transportation and disposal of the existing roof system and related debris. The removal plan shall also include the Contractor's proposed methods for interior and exterior protection and cleanup during removal and re-roofing operations. Identify the proposed location(s) of dumpsters.

1.05 EQUIPMENT

- A. Conveyances: Buggies or wheelbarrows used on roofs shall be limited to 3/8 cubic yard capacity.

- B. Chutes: Provide enclosed chutes for debris transfer from the roof vertically for a distance of 10 feet or more. Do not extend chutes in an unbroken line for more than 20 feet, without substantial breaks at intervals not greater than 20 feet. Debris shall not spill from the bottom of the chute directly onto the ground. Direct chutes into an approved construction debris container. Provide a hose with a nozzle connected to an adequate water supply, near chute outlet to wet debris as necessary for dust control.
- C. Hoists/Cranes: Provide hoists or cranes to remove debris and transport materials to and from the roof. All materials shall be properly secured to prevent loose materials or debris from breaking loose from hoisting apparatus. Debris to be transported from the roof shall be placed directly in approved construction debris containers. Proper protection of wall areas for their entire height shall be provided in the form of heavy duty tarps secured or affixed to exterior walls directly adjacent to or under the area of hoisting.
- D. The use of "bobcat" type removal equipment is prohibited.
- E. Mechanical cutting equipment: Roof cutting equipment shall have an operable blade depth setting mechanism, in order to control the cutting depth of the blade and alleviate the potential of damage to the structural deck.

PART 2 – MATERIALS

NOT USED

PART 3 – EXECUTION

3.01 PREPARATION

- A. Provide, erect, and maintain temporary barriers and security devices as required for performance of the Work.
- B. Protect existing landscaping materials, appurtenances, structures, and finish materials that are not to be demolished.
- C. Mark location of utilities.
- D. Protect existing structures and paving from damage or displacement.
- E. Where nature of demolition requires their use, erect and maintain trash and dust chutes for disposal of materials, rubbish and debris (See Paragraph 1.05).

3.02 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent occupancies.

- B. Conduct operations with minimum interference to public or private accesses. Maintain egress and access at all times.

3.03 DEMOLITION

- A. Disconnect, cap, and identify designated utilities within demolition areas; protect those utilities to remain from damage.
- B. Remove materials to be re-installed or retained. Store and protect in manner to prevent damage.
- C. Remove demolished materials and debris from site.
- D. Do not burn or bury materials on site.
- E. Leave site in clean condition.
- F. Remove temporary work.

3.04 STORAGE AND DISPOSAL

- A. Items to be removed, stored, and protected for re-installation: As indicated on the Drawings and herein, including but not limited to the following:
 - 1. All condensate lines or communications items that may require removal and reinstallation during reconstruction.
- B. Items to be removed: As indicated on the Drawings and herein, including but not limited to the following:
 - 1. Roof systems, underlying lightweight topping slabs, and features as indicated on the Drawings. Refer to Section 02 82 00 – Asbestos Abatement and Disposal.
 - 2. Refer to Mechanical Specifications for mechanical demolition information.
- C. Debris disposal:
 - 1. All debris shall be transported to dumpsters at ground level by enclosed chute. Uncontrolled dropping of debris to ground level will not be permitted. Control visible emissions at the dumpster location by wetting the debris with a fine spray of water at the dumpster level and by providing a tarp cover over the dumpster.
 - 2. Dispose of all debris in accordance with all applicable local, State, Federal regulations for the proper transportation and disposal of roofing materials at an approved landfill.

3.05 CLEANING

- A. Clean, restore and/or replace items stained, dirtied, discolored or otherwise damaged due to the Work, as required by the Owner.
- B. Clean roof, building (interior and exterior), and surrounding areas so they are free of trash, debris and dirt caused by, or associated with the Work.
- C. Clean out drain leaders and piping to the point where it exits the site. Water test all downspouts and gutters prior to and after construction by running water from a hose into each gutter and downspout in the presence of the Owner and/or Owner Representative.
- D. Sweep site and paved areas clean daily.

END OF SECTION

SECTION 02 82 00

ASBESTOS ABATEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The General Conditions and Division I General Requirements shall be included in and made part of this Section.
- B. Examine all other Sections of the Specifications for requirements therein affecting the work of this Section of the Specifications.

1.2 COMPLIANCE AND INTENT

- A. The Contractor is responsible for repair, to the satisfaction of the District, of surfaces not scheduled for demolition that become damaged as a result of the work. All unscheduled repair work shall be at no increase to contract price.
- B. Contractor shall coordinate removal with all site requirements related to protection of existing finishes. Water and encapsulants used during abatement work must not migrate beyond established regulated work area barriers. All protection work must be completed prior to the start of abatement work on each roof and any pathways of travel to the work areas.
- C. This project deals with abatement of asbestos-containing materials (ACMs). It is necessary for the Contractor to coordinate all abatement work with the project drawings and specifications. During all work, provide monitoring and worker protective equipment in accordance with the California Occupational Safety and Health Administration (Cal-OSHA) and as required by this specification. Where there is conflict, the most stringent requirement shall apply.
- D. The work covered by this specification includes the handling, removal, and proper disposal of ACMs. All ACMs shall be removed and disposed of according to all federal, state and local regulations. The Contractor shall determine if additional hazardous materials will be impacted by the scope of the abatement work. The cleanup of any incidental asbestos found in areas undergoing abatement of asbestos that become separated from the building during the dismantling process are part of the work.
- E. The abatement workers shall have received Cal-OSHA accredited training and be certified for asbestos abatement work.
- F. Furnish all labor, materials, facilities, equipment, services, employee training, medical monitoring, permits and agreements necessary to perform the work required for asbestos abatement in accordance with this specification.
- G. Comply with all federal, state, and local regulations pertaining to asbestos removal, storage, transportation and disposal; employee health and safety; Contractor certifications; and all licenses, permits, and training.

- H. Work on the premises shall be confined to areas designated in the Contract Documents. Materials and equipment shall be stored within areas designated by the District. Should additional space be required, the Contractor shall request permission for additional space and shall adequately safeguard occupants from associated health and safety hazards.
- I. Perform all work specified herein with competent persons trained, knowledgeable and qualified in state-of-the-art techniques relating to asbestos abatement, handling, and the subsequent cleaning of contaminated areas.
- J. During removal activities, the Contractor shall protect against contamination of soil, water, plant life, sensitive building finishes, adjacent building areas, and shall ensure that there is no airborne release of dusts. The District may collect air samples in the building and in adjacent areas to evaluate the Contractor's performance. Evidence of settled dust or elevated airborne levels of contaminants will require the implementation of additional controls at no increase to contract price.
- K. It is the Contractor's responsibility to determine the quantities of ACMs that will require removal prior to commencement of the project. The Contractor shall conduct a site visit to determine exact locations of materials that will require abatement. This section provides appropriate protocols for handling and disposal of ACMs. All ACMs shall be removed according to the procedures outlined in this specification. If additional suspect ACMs are discovered during the course of the abatement work, immediately notify the District and/or the District's Environmental Consultant.
- L. The work of this section shall be performed by an entity that holds a current, valid asbestos handling license issued by the California State Contractor's Licensing Board (SCLB) and a current valid Certificate of Registration for Asbestos-Related Work issued by the California Department of Industrial Relations-Division of Occupational Safety and Health (Cal-OSHA), unless other specified. Display copies of CSLB license and Cal-OSHA Registration in a visible place at the job-site.
- M. ACMs removed during the abatement activities shall be disposed of in an approved manner complying with all applicable federal, state, and local regulations. Appropriate waste manifests or letters of salvage shall be furnished to the District thereby limiting the District's liability for improperly salvaged items. Materials are conveyed to the Contractor "as is," without any warranty, expressed or implied, including but not limited to, any warranty to marketability or fitness for a particular purpose, or any purpose. The District or the District's Environmental Consultant shall approve the non-ACM hazardous waste disposal site(s) prior to disposal for materials that may be disposed of in that manner.
- N. All exterior asbestos abatement work shall be conducted within an asbestos regulated work area demarcated with barrier tape and asbestos signage, unless otherwise specified.

1.3 DEFINITIONS

A. The following definitions pertain to work of this section.

1. Abatement: Process of controlling fiber release from ACMs including encapsulation, enclosure, controlled renovation procedures, removal, clean-up and disposal.
2. ACM: Asbestos-containing material
3. Aggressive Sampling: Air sampling either during or following the agitation of the air.
4. AHERA: Asbestos Hazard Emergency Response Act (40 CFR Part 763).
5. Ambient Air Quality: The quality of air (in terms of airborne fiber content) that is present in a given space.
6. Area Monitoring: Sampling of airborne asbestos fiber concentrations within the work area and outside the work area. Sampling shall represent airborne concentrations that may reach the breathing zone.
7. Asbestos Fibers: Refers to asbestos fibers having an aspect ratio of 3:1, and those fibers longer than five (5) microns.
8. Asbestos Permissible Exposure Limit (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter of air as measured by Phase Contrast Microscopy (PCM) analytical method.
9. Asbestos-Containing Material (ACM): Those manufactured products and construction materials including structural and mechanical building materials, as well as packings and gaskets that contain more than one percent (1.0%) asbestos by weight.
10. Asbestos: Asbestos includes asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-gunerite (amosite), anthophyllite, tremolite, and actinolite. For the purposes of determining worker respiratory protection, both the asbestiform and non-asbestiform of the above minerals, and any chemically treated or altered materials shall be considered as asbestos.
11. Authorized Visitor: Designated employees or consultants for the District and representatives of any federal, state or local regulatory or other agency having jurisdiction over the project.
12. Baseline: Refers to the background levels of asbestos monitored before abatement.
13. Breathing Zone: A hemisphere forward of the shoulders and head with a radius of approximately six to nine inches.
14. Breach: A rift or gap in the critical or secondary barriers that allow egress of air from the containment to outside, or vice versa.
15. Cal-OSHA: State of California, Occupational Safety & Health Administration.

16. Chain-of-Custody: A legal concept involving documentation of the physical possession of a sample(s) from the moment it is collected, transported, analyzed, and ultimately stored in an archive.
17. Change Area: Refers to the decontamination area used to change into and out of protective clothing.
18. Certified Industrial Hygienist (CIH): A person certified by the American Board of Industrial Hygiene.
19. Clean Area: An uncontaminated area or room that is part of the worker decontamination area, with provisions for storage of workers' street clothes and protective equipment.
20. Clearance Level: Clearance level for samples analyzed by PCM will be less than 0.01 fibers per cubic centimeter of air and for TEM will be less than 70 structures per square millimeter ($<70 \text{ s/mm}^2$). Samples may be collected by non-aggressive sampling methods and the minimum air volume shall be 1,200 liters.
21. Competent Person: One who is capable of identifying existing and predictable hazards and who has the authority to take prompt corrective measures to eliminate them.
22. Critical Barrier: A unit of temporary construction that provides the only separation between asbestos work area and an adjacent potential occupied space. This includes the decontamination unit, perimeter walls, ceilings, penetrations and any temporary critical barriers between the work area and the uncontaminated environment.
23. CSLB: Contractors State Licensing Board
24. Decontamination Area: Area which is constructed to provide the means for workers to store clothing, equipment and other articles, and to properly remove contamination upon concluding work activities that result in exposure to these hazardous materials.
25. DOP: Dioctylphthalate, the challenge aerosol used to perform on-site leak testing of HEPA filtration equipment.
26. DOT: Federal Department of Transportation.
27. DOSH: Division of Occupational Safety & Health (see also Cal-OSHA)
28. Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
29. Disposal Bag: Minimum six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from a work area to disposal or shipping container. Each disposal bag must have required labels according to Title 8 CCR 1529 (Cal-OSHA asbestos rule), 5194 (HAZCOM). RACM waste must be additionally labeled according to 49 CFR 171-179 (USDOT), and 40 CFR 61 Subpart M (NESHAP). Hazardous waste disposal bags must be labeled with generator's name, address, site location, generator number, and the following information:

DANGER
CONTAINS ASBESTOS FIBERS
CANCER AND LUNG DISEASE HAZARD
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

30. District: Contra Costa Community College District
31. District's Environmental Consultant: Environmental Consulting firm and its representatives retained to provide compliance oversight and monitoring for the Contractor's asbestos abatement work activities.
32. Encapsulant: A liquid material that can be applied to ACMs that controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging) or by penetrating into the material and binding its components together (penetrating encapsulant).
33. Encapsulation: A specified procedure necessary to coat ACMs or asbestos contaminated surfaces with an encapsulant to control the possible release of asbestos fibers into the ambient air.
34. Equipment Area: A contaminated area that is part of the worker decontamination area, with provisions for storage of contaminated clothing and equipment. The equipment area shall be kept clean from asbestos-containing debris at all times.
35. Excursion Limit: A California Code of Regulations (Title 8 CCR 1529) requirement that ensures no employee exposed to airborne concentrations of asbestos in excess of 1.0 fibers per cubic centimeter of air as averaged over a sampling period of thirty (30) minutes.
36. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.
37. Fixed Object: A unit of equipment or furniture in the work area that cannot be removed from the work area.
38. Friable Asbestos-Containing Material: Material that contains more than 1.0% asbestos by weight, and that can be crumbled, pulverized or reduced to powder by hand pressure when dry.
39. Foreman: An individual who typically fulfills the duties of "competent person" as defined by Title 8 CCR 1529. This individual must supply documentation of a passing grade in a Cal-OSHA accredited course in Asbestos Contractor/Supervisor training. The foreman must be on-site during all abatement work.
40. HEPA: High Efficiency Particulate Air filter capable of filtering out airborne particulate 0.3 microns or greater in diameter at 99.97 percent efficiency.
41. Manifest: The document authorized by both Federal and State authorities for tracking the movement of ACMs.

42. Movable Object: A unit of equipment in the work area that can be removed from the work area.
43. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere, and negative during inhalation in relation to the air pressure of the outside atmosphere.
44. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).
45. NESHAP: National Emission Standard for Hazardous Air Pollutants – EPA Regulation 40 CFR Subpart M, Part 61.
46. NIOSH: National Institute for Occupational Safety and Health: Sets test standards, analytical methods, and certifies performance of various respirator designs (research institute within Federal OSHA).
47. NIST: National Institute of Standards and Technology: Administers the NVLAP Program.
48. NVLAP: National Voluntary Laboratory Accreditation Program – evaluates and certifies laboratories doing PLM and TEM analyses.
49. Passive Sampling: Refers to air sampling with no air agitation.
50. Permissible Exposure Limits (PEL): A level of airborne fibers specified by OSHA as an occupational exposure standard for asbestos. This level represents the 8-hour time-weighted average of 0.1 fibers per cubic centimeter of air and 30 minute excursion limit of 1.0 fibers per cubic centimeter of air as measured by Phase Contrast Microscopy (PCM) analytical method.
51. Phase Contrast Microscopy (PCM): Technique using a light microscope equipped to provide enhanced contrast between the fibers and the background. Filters are cleared with a chemical solution and viewed through the microscope at a magnification of approximately 400X. This method does not distinguish between fiber types and only counts those fibers longer than 5 microns and wider than approximately 0.25 microns. Because of these limitations, fiber counts by PCM typically provide only an index of the total concentration of airborne asbestos in the environment monitored.
52. Polarized Light Microscopy (PLM): An optical microscope technique used to identify asbestos content and distinguish between different types of asbestos fibers by their shape and unique optical properties.
53. Powered Air Purifying Respirator (PAPR): A full facepiece respirator that has the breathing air powered to the wearer after it has been purified through a filter.
54. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
55. Remodel: Replacement or improvement of an existing building or portion thereof where exposure to airborne asbestos may result. Remodel includes,

but is not limited to, installation of materials, demolition, cutting, patching, and removal of building materials.

56. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
57. Surfactant: A chemical wetting agent added to water to improve penetration, this reducing the quantity of water required for a given operation or area.
58. Transmission Electron Microscopy (TEM): Asbestos structure analysis for a specified volume of air. TEM is a technique that focuses an electron beam onto a thin sample. As the beams transmits through certain areas of the sample, an image resulting from varying densities of the sample is projected onto a fluorescent screen. TEM is the state-of-the-art analytical method for identifying asbestos fibers collected in air samples in non-industrial settings. TEM microscopes equipped with selected area electron diffraction (SAED) capabilities also can provide information on the crystal structure of an individual particle.
59. Visible Emissions: Any emission containing particulate material that is visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
60. Visual Inspection: A visual inspection by District's Environmental Consultant, of the work area under adequate lighting to ensure that the work area is free of visible debris and dust.
61. Water Filtration: Refers to water filtration to as small a particulate size as technically feasible, but not more than 5 microns.
62. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, HEPA vacuuming, or other cleaning utensils dampened with amended water and afterward thoroughly decontaminated or disposed of as asbestos contaminated waste.
63. Work Area: The area where asbestos removal is performed and that is defined or isolated to prevent the spread of asbestos fibers, dust or debris, and entry by unauthorized personnel. Work area is a regulated area as defined by Title 8 CCR 1529.

1.4 SCOPE OF WORK

- A. Provide the removal of ACMs as specified in this section. Reference all other sections of the Specifications and other documents included in the contract documents for information and requirements that affect the work of this Section.
- B. Table 1 provided at the end of this specification section identifies ACMs that will require removal for the roof replacement work. The Contractor is responsible for field verifying quantities of ACMs to be abated.
- C. The following materials shall be disposed of as regulated asbestos-containing material (RACM): All Category I and Category II materials rendered friable during the removal process.
- D. The following roofing materials can be disposed of as Category I Non-Friable ACMs if they are not rendered friable during removal: Roofing Patch Mastics, Roof Coping

Cap Mastics, Roof Parapet Wall, Roof Mechanical Curbs, Roofing Main Field (tar & gravel), **Roofing Debris (mixed with gravel aggregate – NOTE: this will require that all roof gravel (ballast) be removed as ACM).**

1.5 REFERENCES

The publications listed below form a part of this specification by reference. The publications are referred to in the text by basic designation only. If there is a conflict between any of the listed regulations or standards, then the most stringent or restrictive shall apply.

- A. American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM)
 - 1. ANSI Z9.2-2018 Fundamentals Governing the Design and Operation of Local Exhaust Systems
 - 2. ANSI Z87.1-2015, Occupational and Educational Eye and Face Protection
 - 3. ANSI Z88.2-2015, Respiratory Protection
 - 4. ANSI/ISEA Z89.1-2014, Requirements for Protective Headgear for Industrial Workers
 - 5. ANSI Z88.6, 1984, Respiratory Protection – Respiratory Use Physical Qualifications for Personnel
 - 6. ASTM C 732-2017, Aging Effects of Artificial Weathering on Latex Sealants
 - 7. ASTM D 522-2017, Mandrel Bend Test of Attached Organic Coatings
 - 8. ASTM D 1331 - 2014, Solutions of Surface-Active Agents
 - 9. ASTM D 2794 - 1993 (Revised 2019), Resistance of Coatings to the Effects of Rapid Deformation (Impact)
 - 10. ASTM E 84 - 2007, Surface Burning Characteristics of Building Materials
 - 11. ASTM E 96 - 2016, Water Vapor Transmission of Materials
 - 12. ASTM E 119 - 2018, Fire Tests of Building Construction and Materials
 - 13. ASTM E 736 - 2017, Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
 - 14. ASTM E 1368 - 2014, Visual Inspection of Asbestos Abatement Projects
 - 15. ASTM E1494 - 2018, Standard Practice for Testing Physical Properties of Friable Surfacing Materials
 - 16. ASTM F2412/F2413 - 2005, Personal Protection - Protective Footwear
- B. California Assembly Bills (CAB)
 - 1. CAB 040, Yearly Registration of Contractors
- C. California Code of Regulations (CCR)
 - 1. Title 8 CCR 5208, General Industry – Asbestos
 - 2. CCR CARS, Carcinogen and Asbestos Registration Sections 340-344.53, 341.6 Amended, and 341.9 Amended Through 341.14
 - 3. CCR ESO, Electrical Safety Orders, Chapter 4, Subchapter 5

4. CCR 1523, Illumination
 5. CCR 1529, Asbestos in the Construction Industry
 6. CCR 1531, Construction Respiratory Protective Equipment
 7. CCR 3203, Injury and Illness Prevention Program
 8. CCR 3204, Access to Employee Exposure and Medical Records
 9. CCR 3220, Emergency Action Plan
 10. CCR 3221, Fire Prevention Plan
 11. CCR 5144, Respiratory Protection Equipment Standard
 12. CCR 5194, Hazard Communication Standard
 13. CCR 6003, Accident Prevention Signs
 14. Title 22, Division 4, Minimum Standards for Management of Hazardous and Extremely Hazardous Waste
- D. California Health Services (CHS) Titles 22 and 23, California Administrative Code Disposal Requirements
1. CHS 25123, Section 25123
 2. CHS 25124, Section 25124
 3. CHS 25143, Section 25143
 4. CHS 25163, Section 25163
 5. CHS 66508, Section 66508
 6. CHS 66510, Section 66510
 7. CHS DIV 4, Division 4, Commencing with Section 66000, "Disposal"
- E. California Health and Safety Code (CHSC)
1. CHSC 20, Division 20, Commencing with Section 24200
- F. California Labor Code (CLC)
1. CLC DIVISION 5, Part 1, commencing with 6300
- G. California Propositions (CP)
1. CP 65, Proposition 65
- H. California State Board of Equalization (CSBE)
1. CSBE ETU, Excise Tax Unit
- I. California State License Board (CSLB)
1. CSLB CBPC, California Business and Professional Code Sections 7058.5 and 7058.7, "Certification"
- J. Code of Federal Regulations (CFR)
1. 29 CFR 1910.134, Respiratory Protection
 2. 29 CFR 1910.141, Sanitation
 3. 29 CFR 1910.145, Accident Prevention Signs and Tags

4. 29 CFR 1926.21, Safety Training and Education
 5. 29 CFR 1926.55, Gases, Vapors, Fumes, Dusts, and Mists
 6. 29 CFR 1926.65, Hazardous Waste Operations and Emergency Response
 7. 29 CFR 1926.59, Hazard Communication
 8. 29 CFR 1910.1000, Air Contaminants
 9. 29 CFR 1926.1101, Asbestos
 10. 40 CFR 61-SUBPART A, General Provisions
 11. 40 CFR 61-SUBPART M, National Emission Standard for Asbestos
 12. 40 CFR 260, Hazardous Waste Management Systems: General
 13. 40 CFR 745, Lead; Requirements for Lead-Based Paint Activities
 14. 40 CFR 763, Asbestos Containing Material in Schools
- K. State and Local Regulations
1. Regulation 11, Rule 2, Bay Area Air Quality Management District (BAAQMD)
- L. Underwriters Laboratories, Inc. (UL)
1. UL 586-96, 1996 Test Performance of High-Efficiency Particulate Air Filter Units

1.6 SUBMITTALS PRIOR TO START OF WORK

- A. The reviews by the District or District's Environmental Consultant are intended to be only for general conformance with the requirements. The District or District's Environmental Consultant assumes no responsibility for permits, licenses, notices, materials and methods, equipment or temporary construction required to execute the work described in this Section of the Specification or in other Sections of the Specification or in other documents included in the contract documents.
- B. Before commencing work involving the abatement or disturbance of asbestos, submit the following for review by the District or District's Environmental Consultant.
1. Provide a detailed asbestos abatement work plan that follows Attachment A – Asbestos Abatement Work Plan Outline.
 2. Provide an asbestos site safety plan prior to project initiation. The site safety plan shall deal with, at a minimum: site safety and health hazards; fiber release incidents; control of water leakage or discharge within and/or from the work area; medical emergency; asbestos handling procedures; fall protection; electrical safety; Contractor's internal administrative and inspection procedures; earthquakes and/or fire emergency procedures; protocol for responding to complaints or questions from interested parties; 24-hour emergency telephone numbers for company officers with authority to respond to emergencies.
 3. Competent Person (as defined by Title 8 CCR 1529): Demonstrate education and specialized training with successful completion of examination of a Cal-OSHA accredited asbestos training course.
 4. Workers: Demonstrate education and specialized training with successful completion of a Cal-OSHA accredited asbestos training course.

5. Submit current certificates (less than 11 months) signed by each employee and trainer that the employee has received proper training in the handling of materials that contain asbestos. Include documentation showing that the worker understands the following; health implications and risks involved (including the illnesses possible from exposure to airborne asbestos fibers), the use and limits of the respiratory equipment to be used, and the results of monitoring of airborne quantities of asbestos concerning health and respiratory equipment.
6. Proof of Respirator Fit Testing: Provide proof of respirator fit testing. Fit testing records must be less than eleven (11) months old and document testing on the type of respiratory protective equipment used for this project. Fit testing records must be signed by the Competent Person.
7. Foreman Training: Submit evidence that the foreman to be used on the job fulfills the qualifications detailed in this specification and has experience in similar jobs.
8. Medical Examinations: Submit evidence signed by a physician that each employee used on the job has received an appropriate medical examination as detailed in Title 8 CCR 1529. The submitted document must be less than eleven (11) months old.
9. Rental Equipment: When rental equipment is to be used in the abatement areas or to transport hazardous waste, the Contractor shall provide written notification regarding intended use of the rental equipment to the rental agency before use, with copies to the District's Environmental Consultant.
10. Certificates of Compliance: Submit manufacturer's certification that vacuums, ventilation equipment, and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2. Submit results of onsite DOP testing of all HEPA-filtered ventilation equipment.
11. Submit the proposed landfills to be used for waste disposal.
12. Satisfactory proof that written notification and subsequent updates have been provided to the Bay Area Air Quality Management District (BAAQMD), in accordance with Regulation 11, Rule 2, Cal-OSHA, and Title 40 CFR Part 61 Subparts A&M, National Emission Standards for hazardous Air Pollutant, U.S. EPA, as applicable.
13. Licenses: Submit copies of state and local licenses, evidence of Cal-OSHA registration and permits necessary to carry out the work of this contract.
14. Notification of Other Contractors: If other contractors are working at the job site, before beginning any work the Contractor must inform all other contractors in writing regarding the location, nature, and requirements of the work areas.
15. Safety Data Sheets/Specification Sheets: The Contractor shall submit Safety Data and Specification Sheets for all chemicals, encapsulants, etc. to be used for this project.

1.7 SUBMITTALS AT THE COMPLETION OF THE PROJECT

- A. Upon completion of on-site work, Contractor shall provide a detailed project summary that will include each of the items listed below. The project Summary shall be submitted and approved by the District prior to acceptance of final pay request and shall include the following:
1. Copies of the Security and Safety Logs showing names of persons entering the workspace. The logs shall include date and time of entry and exit, supervisor's record of any accident (detailed description of accident).
 2. Chain of custody documentation and laboratory reports for all analyses performed.
 3. Emergency evacuations and any other safety or health incident.
 4. Submit uniform hazardous and non-hazardous waste manifests prepared, signed and dated by an agent of the landfill. The manifest must certify the amount of hazardous materials delivered to the landfill. The manifest must be provided to the District or District's Environmental Consultant within ten working days after delivery.
 5. Personal air sample results.
 6. Project Summary:
 - a. Abatement contractor's name and address, certification number (CSLB), registration number (DOSH) and Tax ID number.
 - b. Hazardous waste hauler certifications (DHS, DOT).
 - c. Name, address and registration number of hazardous waste hauler.
 - d. Laboratory performing analyses (NVLAP).
 - e. Contract number and name of project.
 - f. Specific inventory (including locations and approximate quantities) of the hazardous materials which were removed or handled.
 - g. Number of employees working on the project.
 - h. Dates of commencement and completion of on-site work.
 - i. Work method employed (i.e., glove bag, mini-containment, full containment with negative air and decontamination enclosure system, etc.)
 - j. Name, location, telephone number and EPA registration of waste disposal site(s) used.
 - k. DOP testing results.

1.8 CONTRACTOR MONITORING

- A. The District or District's Environmental Consultant reserves the right to perform air sampling in selected areas during the course of the project. District or District's Environmental Consultant reserves the right to stop work within an area if in the course of performing monitoring, the District or District's Environmental Consultant observes instances of substantial non-conformance with this Section or other Sections of the Specification presenting health hazards to workers, the general public or the surrounding areas. Work shall not resume until the corrective measures

have been enforced. Instances of substantial non-conformance shall include, but not be limited to, the following:

1. Activities or misconduct imperiling worker's safety and health.
 2. Airborne fiber concentrations as measured by PCM outside of the work area exceeding background or 0.01 f/cc whichever is greater. Airborne concentrations as measured by TEM outside of the work area exceeding background or 70 S/mm², whichever is greater.
 3. Breaches in critical barriers resulting in potential release of asbestos to non-work areas.
- B. The District's Environmental Consultant may perform air sampling inside and outside the hazardous materials work area during all phases of the work. The Contractor shall cooperate fully with the District's Environmental Consultant and ensure the cooperation of his workers during collection of air samples and work area inspections.
- C. When visual inspections or air monitoring are specified, the Contractor shall notify the District or District's Environmental Consultant in writing 24 hours in advance of the day and time when the Contractor will be ready for such inspections or monitoring. Such requests shall be initiated by the Contractor's Competent Person or Foreman indicating that the work area has been previously inspected and is ready for inspection/testing.
- D. Air monitoring generated by the District or District's Environmental Consultant shall not be used by the Contractor to represent compliance with regulatory agency requirements for monitoring of workers exposure to airborne asbestos, nor shall any other activity on the part of the District or District's Environmental Consultant be construed to meet the Contractor's compliance with applicable health and safety regulations.

PART 2 - PRODUCTS

2.1 SIGNS AND LABELS:

- A. Provide labeling in accordance with State and Federal EPA requirements. Provide the required signs, labels, warnings, placards or posted instructions for containers used to transport hazardous material to the landfill.
- B. Location of Caution Signs and Labels: Provide bilingual caution signs at all approaches to work areas in languages used by the Contractor's employees. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos-containing materials, scrap, waste, debris, and other products contaminated with hazardous materials.
- C. Warning Sign Format: Vertical format conforming to Title 8 CCR 1529:

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

- D. Warning Label Format: Provide labels that comply with Title 8 CCR 1529 of sufficient size to be clearly legible, displaying the following:

DANGER CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

2.2 ENCAPSULANTS

- A. Encapsulants shall be U.L. Listed, in full-scale E-119 fire test.
- B. Average depth of penetration shall meet manufacturer's recommendations.
- C. Performance Requirements: Classification - penetrating encapsulant; spray applied and brushable. Product shall be tested and listed by EPA and possess the following characteristics:
1. Flame resistance/flame spread ~25 (ASTM E162) V6.
 2. Fire classification - UL Class A approved in the specific or similar assembly to its intended application.
 3. Product shall be tested and rated non-toxic and non-irritating under the Federal Hazardous Substances Control Act and contain no methylene chloride.
 4. Material shall be tinted sufficiently to provide a readable contrast to background color to which it is applied.

2.3 PLASTIC SHEETING:

- A. Use fire-retardant (FR) polyethylene (poly) film.
1. Thickness - 6-mil, minimum, NO EXCEPTIONS.
 2. Flame Resistance/Flame Spread Rate <25.
 3. Conforms to NFPA #701 and Tested in accordance with ASTM E-84.

2.4 TAPE, ADHESIVE, SEALANTS:

- A. Tape, 2" or wider, shall be capable of sealing joints of adjacent sheet of polyethylene and shall attach polyethylene sheet to finished or unfinished surfaces or similar materials. Tape shall be capable of adhering under dry and wet conditions, including use of amended water. Taping to critical or sensitive surfaces shall be completed using preservation sealing tape.

- B. Spray adhesive for sealing polyethylene to polyethylene shall contain no methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.
- C. Fire resistant sealants shall be compatible with concrete, metals, wood, etc. Sealant shall prevent fire, smoke, water and toxic fumes from penetrating. Sealant shall have a flame spread, smoke and fuel contribution of zero, and shall be ASTM and UL rated for 3 hours for standard method of fire test for fire stop systems.

2.5 VACUUM EQUIPMENT:

- A. All vacuum equipment used in the work area shall use HEPA filtration systems and be of the wet-dry type. The Contractor shall provide on-site independent DOP testing to document the effectiveness of the vacuum units. The test results shall be signed by the individual performing the testing. Repeat DOP testing every thirty (30) days after initial testing. Provide documentation to the District or District's Environmental Consultant with 24 hours of DOP testing.

2.6 RESERVE EQUIPMENT:

- A. Contractor shall have the following equipment on site: two reserve, functioning and DOP-tested HEPA Filter Vacuum Cleaning Units. Contractor shall also have sufficient polyethylene (poly), respirators, protective equipment, tape, tools, decontamination areas for each work area.
- B. Provide authorized visitors requiring access to the work area with suitable protective clothing, headgear, eye protection, as described in this specification, whenever the visitor must enter the work area. The Contractor shall have available and maintain at all times a minimum of three (3) suits and other suitable protective equipment for this purpose. All protective equipment shall be new and for the exclusive use of visitors.
- C. The Contractor shall document that each visitor has been trained and fit-tested prior to entering an abatement area.

2.7 TRANSPORTATION EQUIPMENT:

- A. Transportation equipment, as required, shall be lockable and suitable for loading, temporary storage, transit and unloading of contaminated waste without exposure to persons or property. Any vehicle used to transport asbestos waste shall be properly registered with all applicable controlling agencies.

2.8 CONNECTIONS TO WATER SUPPLY:

- A. Contractor shall assure that all connections to the site's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water shall not damage existing finishes or equipment.

- B. Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system in each work area. Provide fittings as required to allow for connection to existing wall hydrants or spouts.

2.9 OTHER TOOLS AND EQUIPMENT:

- A. The Contractor shall provide other suitable tools for the stripping, removal and disposal activities.
- B. Prohibited Equipment: The following equipment is prohibited from use on this project unless accepted in writing by the District or District's Environmental Consultant:
 - 1. High or low pressure water blasting equipment for hosing of work areas.
 - 2. Bead blasting or other uncontained abrasive blasting methods.
 - 3. Vacuum-powered removal or collection equipment located outside the asbestos work area, such as a "Vacu-Loader".
 - 4. Equipment that creates excessive noise or vibration that would affect the safety of the building or generate complaints from neighboring building occupants. No equipment shall exceed an A-weighted sound level of 85 dB as measured at 3 ft. from the radiating source without written permission of the District or District's Environmental Consultant.
 - 5. Metal wire-brushes.
 - 6. Flammable solvents with a flash point below 140 degrees F or materials containing ethylene glycol ether, methylene chloride, ethyl chloroform (1,1,1-trichloroethane), or other hazardous substances.
 - 7. Non-fire retardant polyethylene sheeting.
 - 8. Polyurethane spray foam for application in fire-rated assemblies, including but not limited to penetrations into stairwells, mechanical rooms, electrical closets, rated floor-to-floor assemblies, etc.

PART 3 - EXECUTION

3.1 INITIAL AREA ISOLATION

- A. The District or District's Environmental Consultant reserves the right to inspect and approve all regulated work area setups before any abatement is undertaken.
- B. If a work area is breached (failure of polyethylene seals, visible dust emission, elevated fiber counts above background level, etc.), the Contractor shall take immediate action to control the breach and clean the area to the satisfaction of the District or District's Environmental Consultant.
- C. If sample results indicate that conditions have exceeded the baseline or clearance criteria, as determined by the District or District's Environmental Consultant, all work shall cease. Work shall not recommence until the condition(s) causing the increase have been corrected.

- D. Verify that all electrical power, gas and water systems to the work area have been shut down and disconnected so that there is no possibility of reactivation and electrical shock.
- E. Provide all connections for temporary utilities in the work area needed throughout abatement. Temporary electrical power shall be according to OSHA and the National Electrical Code for Wet Environments.
- F. Contractor shall conform to the District's lockout requirements, and secure the work area at all times. Area entrances and exits shall be secured by the Contractor throughout the abatement phase. Unauthorized visitors are strictly prohibited. Only the Contractor, District or District's designative representatives are permitted at the job site. Contractor shall ensure that all doors, gates, windows, and potential entrances to the work areas and the designated waste location areas are secured and locked at the end of each workday.
- G. Contractor shall store all materials, equipment, and supplies for the project in areas designated by the District and in accordance with District's requirements.
- H. Provide signs around the perimeter of the works areas according to EPA and Cal-OSHA.
- I. Contractor shall provide temporary sanitary services of adequate capacity to handle the maximum estimated crew size plus an additional twenty percent. Contractor shall maintain the temporary facilities throughout the duration of the project.
- J. The Contractor shall be responsible for identifying all HVAC components (if applicable) that lead into or out of the work areas. All components shall be sealed airtight for the duration of the abatement work. All openings shall be sealed with two (2) layers of 6 mil polyethylene secured with duct tape, as applicable.
- K. Pre-clean fixed objects in the work area using HEPA filtered vacuums and/or wet cleaning methods. Protect fixed objects with protective barriers (as appropriate) and cover with 6 mil poly sealed with tape.

3.2 REGULATED WORK AREA SET-UP PROCEDURES

- A. Containment is not required for the exterior, non-friable roofing work. All exterior asbestos abatement not conducted in containment shall be carried out in a regulated area demarcated with asbestos warning signs and tape and 6-mil poly drop sheets sufficient in size to capture fallen debris. Critical barriers consisting of 2 layers of 6-mil poly sheeting shall be installed on HVAC equipment and other critical barriers located on the roof.
- B. Approved fire extinguishers (Class ABC, multi-purpose, dry chemical type, rated: 4A; 60BC) shall be readily available to workers (maximum travel distance of 50 feet) inside and adjacent to work area(s). Personnel and emergency exits shall be clearly indicated in the work area. The emergency exit plan shall be approved by the District's Environmental Consultant prior to the set up of any work areas.

3.3 PERSONNEL PROTECTION

A. Informed Workers:

1. All workers shall be informed of the hazards of ACMs and any other hazardous materials exposure. Workers shall also be instructed in the use and fitting of respirators, protective clothing, decontamination procedures, and all other aspects associated with the abatement work.

B. Personal Hygiene Practices:

1. The Contractor shall enforce and follow good personal hygiene practices during the abatement of ACMs. These practices will include but not be limited to the following: no eating, drinking, smoking or applying cosmetics in the work area. The Contractor shall provide a clean space, separated from the work area, for these activities.
2. Workers shall remove street clothes in the clean area and put on a respirator and clean protective clothing before entering the work area. Upon exiting the work area, remove gross contamination from clothing before leaving the work area; proceed to the change area and remove clothing except respirators; proceed to the wash station area; clean the outside of the respirator with soap and water; remove respirator and thoroughly wash. Following wash station, proceed directly to the clean area and dress in street clothes. Do not wear disposable clothing outside the decontamination area.
3. If data gathered by the District or District's Environmental Consultant in areas adjacent to the work areas shows exposure to airborne asbestos or other hazardous materials exceeding Cal-OSHA criteria, that area will become regulated and workers must wear protective clothing and approved respirators and must have a shower facility provided to them.

C. Respirators:

1. Establish a respiratory protection program as outlined by ANSI and required by Cal-OSHA. Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH). Respirators selected must be approved by the Competent Person. Submit program for review a minimum of five (5) working days prior to the commencement of abatement activities.
2. Provide workers with approved and personally-issued respirators with replaceable filters. Provide sufficient quantity of filters approved by NIOSH for use in asbestos environments so that workers can change filters as required by the manufacturer.
3. At a minimum, provide each employee with the following respiratory protection for each work phase:
 - a. Pre-cleaning, work area set-up, and work area removal work: NIOSH-approved, half-face respirators with HEPA cartridges.
 - b. Asbestos abatement of roof materials: half-face respirators with HEPA cartridges.
4. At all times, respiratory protection selected shall, at a minimum, meet the requirements of the Table 1 below.

Table 1 – Respiratory Protection

<u>Airborne Concentration of Asbestos</u>	<u>Required Respirator</u>
Not in excess of 1.0 f/cc (10 X PEL)	Half-mask air purifying respirator other than a disposable respirator, equipped with high efficiency filters
Not in excess of 5.0 f/cc (50 X PEL)	Full facepiece air purifying respirator equipped with high efficiency filters
Not in excess of 10 f/cc (1,000 X PEL)	Any powered air purifying respirator equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode
Not in excess of 100 f/cc (10,000 X PEL)	Full facepiece supplied air respirator operated in pressure demand mode
Greater than 100 f/cc or unknown concentration	Full facepiece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus

D. Protective Clothing:

1. Provide personnel exposed to asbestos fibers with fire retardant disposable protective whole-body clothing, head coverings, gloves, and foot coverings. Provide appropriate gloves to protect workers hands from exposure to hazardous materials. Make sleeves secure at the wrists and make foot coverings secure at the ankles with tape. Ensure that all personnel entering and leaving the work area follow this procedure. Suits shall be of adequate size to accommodate the largest employee. Foot covers may be part of the coveralls. Non-disposable footwear shall be left in the work area until it is decontaminated or disposed of at the completion of the job.
2. Protective clothing will be worn inside the work area after the area passes pre-abatement inspection and shall remain in use until the area passes final clearance inspection.

E. Eye Protection: Provide safety glasses or goggles to personnel removing or handling asbestos-containing materials and waste.

F. Emergency Precautions and Procedures:

1. Establish emergency and fire exits from the work area. Display necessary signage at exits and paths to exits with representative visual aids. A diagram of all emergency and fire exits shall be posted in a conspicuous area proximate to the entrance to each work area.
2. The Contractor's supervisor/competent person shall be trained and certified in first aid and CPR, and be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, the Contractor shall implement fiber reduction techniques until the injured person has been removed from the work area.

3.4 ASBESTOS REMOVAL

- A. The Contractor shall abate all ACMs identified in this specification and/or that require disturbance to complete work specified in other specification sections.
- B. The Contractor shall continuously apply wetting agent throughout the removal process. The wetting agent shall be applied with a low-pressure fine spray to minimize fiber releases. The materials shall be thoroughly saturated so that there is no detectable fiber release. All ACM shall be immediately packaged in leak-tight containers following removal.
- C. Minimize removal activities of ACMs that generate airborne particulate. To the extent feasible, score or cut-out ACMs in sections, wetting along the scoring line continually, and misting the air with an airless sprayer to knock down suspended particulate. After completion of removal work, surfaces from which asbestos has been removed shall be wet cleaned to remove all visible material and residue.
- D. Coordinate extent of removal with the other contract documents.
- E. Wet clean the exterior surfaces of waste containers prior to removal from the work area. The Contractor shall transport asbestos-containing waste bags to the waste debris box at designated hours approved by the District or District's Environmental Consultant. RACM shall be packaged in a minimum of two (2) 6-mil polyethylene bags. Bags shall be properly labeled for RACM disposal including site-specific generator labels. Non-friable waste shall be packaged in clear, leaktight containers and properly labeled while stored on-site.
- F. Asbestos-containing debris and contaminated water shall be cleaned from the work area at the end of each work shift. The Contractor shall clean the work area using wet methods and HEPA vacuum equipment.

3.5 REGULATED AREA MONITORING

- A. Prior to each work shift and continuously throughout the project, each work area and decontamination area shall be inspected and repaired as needed.
- B. Ambient asbestos fiber levels outside each work area shall not exceed 0.01 f/cc (PCM) or 70 s/mm² (TEM). If the asbestos fiber concentrations outside work areas exceed those levels shown above, then abatement must stop and operations be reviewed and modified until the fiber count can be reduced to within the acceptable limits.

3.6 AIR MONITORING

- A. The purpose of any air monitoring that may be conducted by the District or District's Environmental Consultant will be to detect possible release of fibers or dusts emanating from the work areas.
- B. All PCM air sample analysis shall comply with NIOSH Method 7400. All TEM analysis shall be consistent with modified-AHERA protocols or NIOSH 7402.

- C. The District or District's Environmental Consultant reserves the right to perform and / or observe final clearance inspection and sampling.
- D. The method of analysis for in-progress asbestos air samples shall be PCM and TEM at the option of the District or District's Environmental Consultant.
- E. The Contractor shall be responsible for all personal air sampling. These samples shall be taken each shift and for each distinct crew operation, and shall be used to verify adequacy of fiber control and respiratory protection. Personal breathing zone air sampling shall be in accordance with the Cal-OSHA asbestos standard. A minimum of 25% of the workforce shall be monitored during each shift. All sample results shall be available on-site within 24-hours of sample collection. If two consecutive shifts of non-compliant or overloaded samples are noted, the contractor shall hire a CAC/CSST at their own expense to assist in compliance with the specifications.

3.7 CLEARANCE INSPECTIONS

- A. The District or District's Environmental Consultant reserves the right to conduct visual inspections. Contractor shall notify the District or District's Environmental Consultant when the decontamination process in each work area is complete. Evidence of debris will require additional clean up by the Contractor. Contractor shall be responsible for re-cleaning all areas found to be deficient.
- B. If the District or District's Environmental Consultant determines that the work area is sufficiently clean, the Contractor may proceed. If the District or District's Environmental Consultant determines that certain areas require additional cleaning, the Contractor shall re-clean the work area and request a second inspection of the recleaned area. All costs incurred by the District or District's Environmental Consultant for inspections required after the second inspection will be charged to the Contractor.
- C. Once the visual inspection is passed, the Contractor shall be approved to remove the regulated work area.

3.8 ASBESTOS CLEARANCE CRITERIA:

- A. The asbestos abatement work areas will be cleared by visual inspection only.

3.9 ASBESTOS DISPOSAL

- A. It is the responsibility of the Contractor to determine current waste handling, labeling, transportation and disposal regulations for the work site and for each waste disposal landfill. The Contractor must comply fully with these Specifications, local, state, and federal regulations and provide documentation of the same.
- B. Ensure that polyethylene bags are sealed air-tight. All bags shall be wet cleaned prior to removing them from the work area.

- C. Ensure all disposal containers are properly labeled according to 8 CCR 1529, 5194 (HAZCOM), 49 CFR 171-179 (USDOT), 40 CFR 61 Subpart M (NESHAP), and any local regulations and state regulations as required by this specification.
- D. Filter all wastewater to the technically feasible limit, but not more than five (5) microns before disposal. Comply with all current local, state and federal codes relating to waste water release.
- E. Asbestos-containing waste that is properly labeled and double-bagged may be temporarily stored in areas approved by the District. Areas must be made secure before storing the waste. Waste is not to remain in temporary storage area for longer than three (3) days before final load-out of materials.
- F. All friable and non-friable asbestos waste shall be double-wrapped prior to transport from the site.
- G. All vehicles used to transport hazardous waste must be registered with the Department of Toxic Substances Control and Department of Transportation and maintain proper registration and with vehicle at all times.
- H. Trucks must have an enclosed cargo area with a storage compartment that is fully lined with a minimum of one (1) layer of 6-mil polyethylene on the walls and two (2) layers on the floor.
- I. All vehicles and containers used to transport waste are subject to inspection and approval of District prior to departure from site.
- J. Contractor shall not throw bags into the truck in a way that may cause the bags to burst open.
- K. Contractor shall provide at minimum one (1) day advance notification to the District when signatures are required on manifest(s). The Contractor shall ensure that the Hazardous or Non-Hazardous Waste Manifests are correctly filled out. The Contractor shall give the appropriate copies to the District and shall also instruct the District in writing that they must send the appropriate copy to the Department of Toxic Substances Control.
- L. If a debris box is used, the Contractor shall make all necessary arrangement with the District including obtaining all appropriate permits.
- M. Contractor is responsible for all coordination with the waste disposal site and with the waste hauling company.
- N. Debris box for hazardous waste shall be fully lined with a double layer of polyethylene sheeting and must be locked at all times when unattended.
- O. Debris box shall be constructed with minimum 20-gauge steel with no windows or openings other than the door. The door of the container shall have a secure cover on the locking device with access to the lock only at the key-hole. Once the debris box is filled and the manifest is signed, Contractor must transport the debris box off the job site.

- P. Disposal shall be in a District approved landfill that meets EPA requirements.

TABLE I
ASBESTOS-CONTAINING MATERIALS

Material Description	Material Location	Waste Category	Asbestos Type
Black roofing patch	Throughout – roof patch mastics (e.g. main roof field, mechanical barriers, HVAC curbs, etc.)	Cat. I	2% CH
Roof – Coping (white) cap	Throughout – coping cap	Cat. I	4% CH
Roof parapet wall	Throughout – parapet walls	Cat. I	Roofing Felt: 5% CH Roofing Mastic: 5% CH
Roof – mechanical curbs	Throughout – mechanical curbs	Cat. I	Roofing Felt: 5% CH Roofing Mastic: 5% CH
Roofing debris mixed with aggregate	Throughout – roof field	Cat. I	30% CH
Roof – main field, tar & gravel	Throughout – roof field	Cat. I	5% CH

NA = Not Applicable, CH = Chrysotile, RACM = Regulated asbestos containing material (friable), Cat. I = Non-friable (note ACM must be reclassified as a RACM if rendered friable during removal), Cat. II = Category II Non-friable (note ACM must be reclassified as a RACM if rendered friable during removal), sf = square feet

END OF SECTION 02 82 00

ATTACHMENT A
ASBESTOS ABATEMENT WORK PLAN OUTLINE

In accordance with the contract documents, the Contractor is required to prepare a written, site-specific Asbestos Abatement Work Plan, and submit to the District for approval prior to start of work. This plan is required for the contractor to meet Cal-OSHA requirements as well as the contract documents, and shall describe work procedures and control methods that will protect the District's facilities and the environment.

I. Location of Work:

The work to be completed under this work plan will be completed at:

(Building name)

(Location within building)

Previous asbestos inspections or surveys have found that ACMs are present at the following locations:

(List all materials and locations to assure the District and the Contractor are aware of all hazardous materials locations)

II. Description of Work:

Describe the anticipated work scope

III. Schedule:

Phase/Task	Anticipated Date(s)
------------	---------------------

Mobilization	_____
Set-up of work area(s), containments	_____
Abatement	_____
Final Cleaning	_____
Visual Inspection	_____
Final Clearance (visual and air sampling)	_____
Teardown	_____
Demobilization	_____

IV. Equipment and Materials

List all equipment and materials to be used, such as the following:

HEPA Vacuums	Negative air filtration units
Scrapers	Manometers
Power saws	Shower facilities
Pry bars	Airless sprayers/compressors
Cutting shears	Cleaning detergents
Other hand tools	Solvents (must be approved by District)
Encapsulants/sealants	Roller/brushes
Gloves	Disposable coveralls
Respiratory protection	Eye & foot protection
Fall Protection	Scaffolds/Ladders
Gas/Diesel Powered Equipment	

V. Crew

List all workers and supervisors with emergency contact names and phone numbers.

Clearly identify the supervisor and competent person who have authority for all safety and health.

VI. Control Measures and Work Practices

Describe in a narrative format specific work procedures, exposure/ contamination controls, and engineering controls. This description should include, but not be limited to, the following:

OSHA Class I, II, III and IV work	Wet methods
Negative pressure enclosure	Glovebag removal
Respiratory protection	HEPA vacuums
Mini-containments	Solvent removal of mastic
List other procedures	

VII. Respiratory Protection and Protective Clothing/Personal Protective Equipment

List all respiratory protection including types and manufacturers which are anticipated for this project. Identify the phases of the project for which respirators will be required or likely to be required. List all personal protective equipment anticipated to be used on the project.

VIII. Decontamination/Hygiene Facilities

Identify the types and locations of decontamination or hygiene facilities to be used on this project. Specify use of disposable towels, soap, hot and cold water, and other supplies. Specify the required use of the facilities, including use of the facilities prior to eating, drinking, smoking and before leaving the project site. Describe handling or treatment of asbestos-contaminated solid waste and wastewater.

IX. Air Monitoring Data

Identify general worker air monitoring protocols to be followed on this project, including worker category classifications, frequency of monitoring, anticipated laboratory to be used for analysis, pump calibration techniques, etc. Identify the competent person responsible for conducting personal air monitoring and proposed consultant if air sampling requirements are not met from two consecutive shifts.

X. Containment Diagram

Include a diagram (hand written is acceptable) of the containment(s) showing the containment perimeter in relation to the surrounding areas, locations of negative air machines and exhaust locations, direction of airflow, and decontamination areas.

XI. Waste

Describe how all waste on this project will be packaged, labeled, stored, transported, manifested and disposed

XII. Preparation of Asbestos Abatement Work Plan

Date Prepared and Prepared By (signature, name and title)

May 19, 2022

Contra Costa Community College District
500 Court Street
Martinez, California 94553

Attn: Mr. Stefan Johnson
Critical Solutions

RE: Limited Pre-Renovation Asbestos and Lead Survey Report
Los Medanos College – Votech Roof
2700 East Leland Road, Pittsburg, CA
Terracon Project #: R1227233

Dear Mr. Johnson:

Terracon Consultants, Inc. (Terracon) conducted a limited pre-renovation asbestos and lead survey of the Votech Building roof on the Los Medanos College (LMC) campus located at 2700 East Leland Road, Pittsburg, California, on May 3, 2022.

The survey was performed in the roof area of the building depicted on the attached sample location diagram. Michael Reed, Certified Site Surveillance Technician (CSST) and California Department of Public Health (CDPH) certified Lead Sampling Technician, performed the survey. Steffen Steiner, Certified Asbestos Consultant (CAC) and CDPH Lead Inspector/Assessor with Terracon, provided project management.

During the referenced survey event, six (6) of the eight (8) suspect asbestos-containing materials (ACMs) sampled were found to contain asbestos upon analysis by polarized light microscopy (PLM). Table I below provides a summary of the asbestos sample results.

TABLE I – ASBESTOS SAMPLE RESULTS			
HM # / Material Description	Sample Locations	NESHAP Category	Results
01 / Grey sealant on sheet metal coping	Roof – south, southeast and west	N/A	ND
02 / Black roofing patch	Roof – main field northwest, main field at mechanical barrier, HVAC curb	Cat. I	2% CH

Limited Pre-Renovation Asbestos and Lead Survey Report

LMC – Votech Roof ■ Pittsburg, CA

May 19, 2022 ■ Terracon Project No. R1227233

**TABLE I – ASBESTOS SAMPLE RESULTS**

HM # / Material Description	Sample Locations	NESHAP Category	Results
03 / Gray/Black roof pitch pan mastic	Roof – HVAC barrier	N/A	ND
04 / Roof – Coping (white) cap	Roof – southwest, northwest and east	Cat. I	4% CH
05 / Roof parapet wall	Roof – southeast corner, northwest and east	Cat. I	Roofing Felt: 5% CH Roofing Mastic: 5% CH
06 / Roof – mechanical curbs	Roof – southwest corner, center and northeast corner	Cat. I	Roofing Material: 5% CH Roofing Mastic: 5% CH
07 / Roofing debris mixed with aggregate	Roof – east, southwest and northeast	Cat. I	30% CH
08 / Roof – main field, tar & gravel	Roof – south, center and east	Cat. I	5% CH

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

It should be noted that Terracon could not access a portion of the roof area at the southeast corner as depicted on the sample location diagram. The materials identified as asbestos-containing in the table above should be assumed present at this portion of the building. Additionally, there is asbestos-containing roofing debris mixed with the aggregate (HM #07). Therefore, the aggregate/gravel should be properly abated and disposed of as asbestos-containing material.

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

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

Limited Pre-Renovation Asbestos and Lead Survey Report

LMC – Votech Roof ■ Pittsburg, CA

May 19, 2022 ■ Terracon Project No. R1227233



One (1) sample of paint was collected from roof and analyzed for lead at EMLab in Tustin, California by Flamed Atomic Absorption Spectrometry (EPA 7000B). Table II below provides a summary of the lead sample result.

TABLE II – LEAD SAMPLE RESULTS			
Sample # / Sample Description	Sample Component / Substrate	Condition	Result (ppm)
Pb1 / White paint on coping	Roof coping - west / concrete	Intact	<40

ppm – parts per million

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

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

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

Respectfully,

Steffen Steiner
CAC, CDPH Lead I/A
Office Manager

David Block, PhD
CAC, CDPH Lead I/A
Project Manager

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



Report for:

Ms. Karin Schroeter
Terracon Consultants, Inc. - Emeryville
1466 66th Street
Emeryville, CA 94608

Regarding: Project: R1227233; Los Medanos College
EML ID: 2919276

Approved by:



Approved Signatory
Danny Li

Dates of Analysis:
Asbestos PLM: 05-11-2022

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

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

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

Eurofins EMLab P&K2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Total Samples Submitted:** 24**Total Samples Analyzed:** 24**Total Samples with Layer Asbestos Content > 1%:** 10**Location: 1A, Gray Sealant on Sheet Metal Coping; Roof-South**

Lab ID-Version‡: 14013805-1

Sample Layers	Asbestos Content
Silver Sealant	ND
Sample Composite Homogeneity:	Good

Location: 1B, Gray Sealant on Sheet Metal Coping; Roof-South East

Lab ID-Version‡: 14013806-1

Sample Layers	Asbestos Content
Silver Sealant	ND
Sample Composite Homogeneity:	Good

Location: 1C, Gray Sealant on Sheet Metal Coping; Roof-West

Lab ID-Version‡: 14013807-1

Sample Layers	Asbestos Content
Gray Sealant	ND
Sample Composite Homogeneity:	Good

Location: 2A, Black Roofing Patch; Roof-Main Field-NW

Lab ID-Version‡: 14013808-1

Sample Layers	Asbestos Content
Black Mastic	ND
Sample Composite Homogeneity:	Good

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

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

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

Eurofins EMLab P&K2841 Dow Avenue, Suite 300, Tustin, CA 92780
(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Location: 2B, Black Roofing Patch; Roof-Main Field-At Mechanical Barrier**

Lab ID-Version‡: 14013809-1

Sample Layers	Asbestos Content
Black Mastic	2% Chrysotile
Sample Composite Homogeneity:	Good

Location: 2C, Black Roofing Patch; Roof-HVAC Curb

Lab ID-Version‡: 14013810-1

Sample Layers	Asbestos Content
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: 3A, Gray/Black Roof Pitch Pan Mastic; Roof-HVAC Barrier

Lab ID-Version‡: 14013811-1

Sample Layers	Asbestos Content
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: 3B, Gray/Black Roof Pitch Pan Mastic; Roof-HVAC Barrier

Lab ID-Version‡: 14013812-1

Sample Layers	Asbestos Content
Black Mastic	ND
Sample Composite Homogeneity:	Good

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(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Location: 3C, Gray/Black Roof Pitch Pan Mastic; Roof-HVAC Barrier**

Lab ID-Version‡: 14013813-1

Sample Layers	Asbestos Content
Black Mastic	ND
Sample Composite Homogeneity:	Good

Location: 4A, Roof-Coping (White) Cap; Roof-SW

Lab ID-Version‡: 14013814-1

Sample Layers	Asbestos Content
White Roofing Material	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 4B, Roof-Coping (White) Cap; Roof-NW

Lab ID-Version‡: 14013815-1

Sample Layers	Asbestos Content
White Roofing Material	ND
Black Roofing Mastic	4% Chrysotile
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 4C, Roof-Coping (White) Cap; Roof-E

Lab ID-Version‡: 14013816-1

Sample Layers	Asbestos Content
White Roofing Material	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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Client: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Location: 5A, Roof Parapet Wall; Roof-SE Corner**

Lab ID-Version‡: 14013817-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Material	ND
Black Roofing Felt	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	15% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 5B, Roof Parapet Wall; Roof-NW

Lab ID-Version‡: 14013818-1

Sample Layers	Asbestos Content
Black Roofing Material	ND
Black Roofing Felt	4% Chrysotile
Black Roofing Mastic	3% Chrysotile
Composite Non-Asbestos Content:	15% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Poor

Location: 5C, Roof Parapet Wall; Roof-East

Lab ID-Version‡: 14013819-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Material	ND
Black Roofing Felt	5% Chrysotile
Black Roofing Mastic	5% Chrysotile
Composite Non-Asbestos Content:	15% Cellulose 15% Glass Fibers
Sample Composite Homogeneity:	Poor

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Client: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos College

Date of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022

ASBESTOS PLM REPORT**Location: 6A, Roof-Mechanical Curbs; SW Corner**

Lab ID-Version‡: 14013820-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Material	ND
Black Roofing Mastic	ND
Gray Roofing Material	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Poor

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Client: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Location: 6B, Roof-Mechanical Curbs; Center**

Lab ID-Version‡: 14013821-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Material	ND
Black Roofing Mastic	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Poor

Location: 6C, Roof-Mechanical Curbs; NE Corner

Lab ID-Version‡: 14013822-1

Sample Layers	Asbestos Content
Black Roofing Shingle	ND
Black Roofing Material	5% Chrysotile
Black Roofing Mastic	5% Chrysotile
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Poor

Location: 7A, Debris Mixed with Roof Aggregate; East

Lab ID-Version‡: 14013823-1

Sample Layers	Asbestos Content
Black/White Roofing Material	30% Chrysotile
Sample Composite Homogeneity:	Good

Location: 7B, Debris Mixed with Roof Aggregate; South West

Lab ID-Version‡: 14013824-1

Sample Layers	Asbestos Content
Black/White Roofing Material	30% Chrysotile
Sample Composite Homogeneity:	Good

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(866) 888-6653 Fax (623) 780-7695 www.emlab.comClient: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos CollegeDate of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022**ASBESTOS PLM REPORT****Location: 7C, Debris Mixed with Roof Aggregate; North East**

Lab ID-Version‡: 14013825-1

Sample Layers	Asbestos Content
Black/White Roofing Material	30% Chrysotile
Sample Composite Homogeneity:	Good

Location: 8A, Roof-Main Field-Tar & Gravel; South

Lab ID-Version‡: 14013826-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
White Foam	ND
Sample Composite Homogeneity:	Moderate

Comments: Tar not detected.**Location: 8B, Roof-Main Field-Tar & Gravel; Center**

Lab ID-Version‡: 14013827-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Black Tar	5% Chrysotile
Composite Non-Asbestos Content:	15% Vermiculite
Sample Composite Homogeneity:	Moderate

Location: 8C, Roof-Main Field-Tar & Gravel; East

Lab ID-Version‡: 14013828-1

Sample Layers	Asbestos Content
Gray Non-Fibrous Material	ND
Black Tar	5% Chrysotile
Composite Non-Asbestos Content:	15% Vermiculite
Sample Composite Homogeneity:	Moderate

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



002919276

Terracon

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

☒ PM - S. Steiner
spsteiner@terracon.com☐ PM - K. Schroeter
kmschroeter@terracon.com☐ PM - K. Pilgrim
kmpilgrim@terracon.com☐ PM - M. Benefield
msbenefield@terracon.com☐ PM - T. Kattchee
takattchee@terracon.com☐ PM - W. Frieszell
wmfrieszell@terracon.com☐ PM - D. Block
David.block@terracon.com☐ denise.wall@terracon.com
Engineering Assistant☐ heidi.santos@terracon.com
Admin Assistant

ACM BULK SAMPLE DATA SHEET

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

Project Name/ Address/ Building No. LOS MEDANOS COLLEGEProject# R1227233 Sampled By: M. REED Sampling Date: 5-3-2022Sample(s) sent to: ☐ MAL ☐ ASB TEM ☐ EMLAB ☐ OtherTAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3 days

HM#	Material Description	Sample ID	Sample Location & Material Location	Quantity:
01	GRAY SEALANT ON SHEET METAL COPING	1A	ROOF - SOUTH	
		1B	ROOF - SOUTH EAST	
		1C	ROOF - WEST	
02	BLACK ROOFING PATCH	2A	ROOF - MAIN FIELD - NW	
		2B	- " " - AT MECHANICAL BARRIER	
		2C	- HUNG CURB	
03	GRAY/BLACK ROOF PATCH PAN MASTIC	3A	ROOF - HUNG BARRIER	
		3B		
		3C		
04	ROOF - COPING (WHITE) CAP	4A	ROOF - SW	
		4B	- NW	
		4C	- E	
05	ROOF PARAPET WALL	5A	ROOF - SE CORNER	
		5B	- NW	
		5C	- EAST	

Relinquished By: M. REEDSignature: M. ReedDate/Time: 5-3-2022Received By: PRICY VITENTSignature: PRICYDate/Time: 5/4/22 10:35Relinquished By: PRICYSignature: PRICYDate/Time: 5/6/22 10:15aReceived By: 5/4/22Signature: PRICYDate/Time: 5/6/22 10:15a

22-0/23.7

IR 96

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

☒ PM - S. Steiner spsteiner@terracon.com
☐ PM - K. Schroeter kmschroeter@terracon.com
☐ PM - K. Pilgrim kmpilgrim@terracon.com
☐ PM - M. Benefield msbenefield@terracon.com
☐ PM - T. Kattchee takattchee@terracon.com
☐ PM - W. Frieszell wmfrieszell@terracon.com
☐ PM - D. Block David.block@terracon.com
☐ denise.wall@terracon.com Engineering Assistant
 ☐ heidi.santos@terracon.com Admin Assistant

ACM BULK SAMPLE DATA SHEET

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

Project Name/ Address/ Building No. LOS MEDANOS COLLEGE
 Project# R1227233 Sampled By: M. REED Sampling Date: 5-3-2022
 Sample(s) sent to: ☐ MAL ☐ ASB TEM ☐ EMLAB ☐ Other _____
 TAT ☐ Rush ☐ 24HRS ☐ 48HR ☒ 3-5 days

HM#	06	Material Description	ROOF - MECHANICAL CURBS
Sample ID		Sample Location & Material Location	Quantity:
	6A	SW CORNER	
	6B	NE CORNER CENTER	
	6C	NE CORNER	
HM#	07	Material Description:	DEBRIS MIXED WITH ROOF AGGREGATE
Sample ID		Sample Location & Material Location	Quantity:
	7A	EAST	
	7B	SOUTH WEST	
	7C	NORTH EAST	
HM#	08	Material Description:	ROOF - MAIN FIELD - TAR & GRAVEL
Sample ID		Sample Location & Material Location	Quantity:
	8A	SOUTH	
	8B	CENTER	
	8C	EAST	
HM#		Material Description:	
Sample ID		Sample Location & Material Location	Quantity:
HM#		Material Description:	
Sample ID		Sample Location & Material Location	Quantity:

Relinquished By: M. REED Signature: M. REED Date/Time: 5-3-2022
 Received By: Isis Raele Signature: [Signature] Date/Time: 5/4/22 12:35
 Relinquished By: _____ Signature: _____ Date/Time: _____
 Received By: _____ Signature: _____ Date/Time: _____

22-0123-7

IR 96



Report for:

Ms. Karin Schroeter
Terracon Consultants, Inc. - Emeryville
1466 66th Street
Emeryville, CA 94608

Regarding: Project: R1227233; Los Medanos College
EML ID: 2919276

Approved by:



Laboratory Manager
Danny Li

Dates of Analysis:
Lead - Flame AA: 05-11-2022

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

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

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

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

Client: Terracon Consultants, Inc. - Emeryville
C/O: Ms. Karin Schroeter
Re: R1227233; Los Medanos College

Date of Sampling: 05-03-2022
Date of Receipt: 05-06-2022
Date of Report: 05-11-2022

LEAD: FLAME ATOMIC ABSORPTION SPECTROMETRY

Location:	Pb1: White Concrete Coping; Roof Coping (W)
Comments (see below)	None
Lab ID-Version‡:	14013829-1
Analysis Date:	05/11/2022
Sample type	Paint Chip sample
Method*	NIOSH 7082 & EPA 7000B modified
† Method Reporting Limit	40 ppm
Sample size	0.2513 grams
§ Total Lead Result	< 40 ppm

Comments:

Sample results have not been corrected for blank values.

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

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

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

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

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

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



002919276

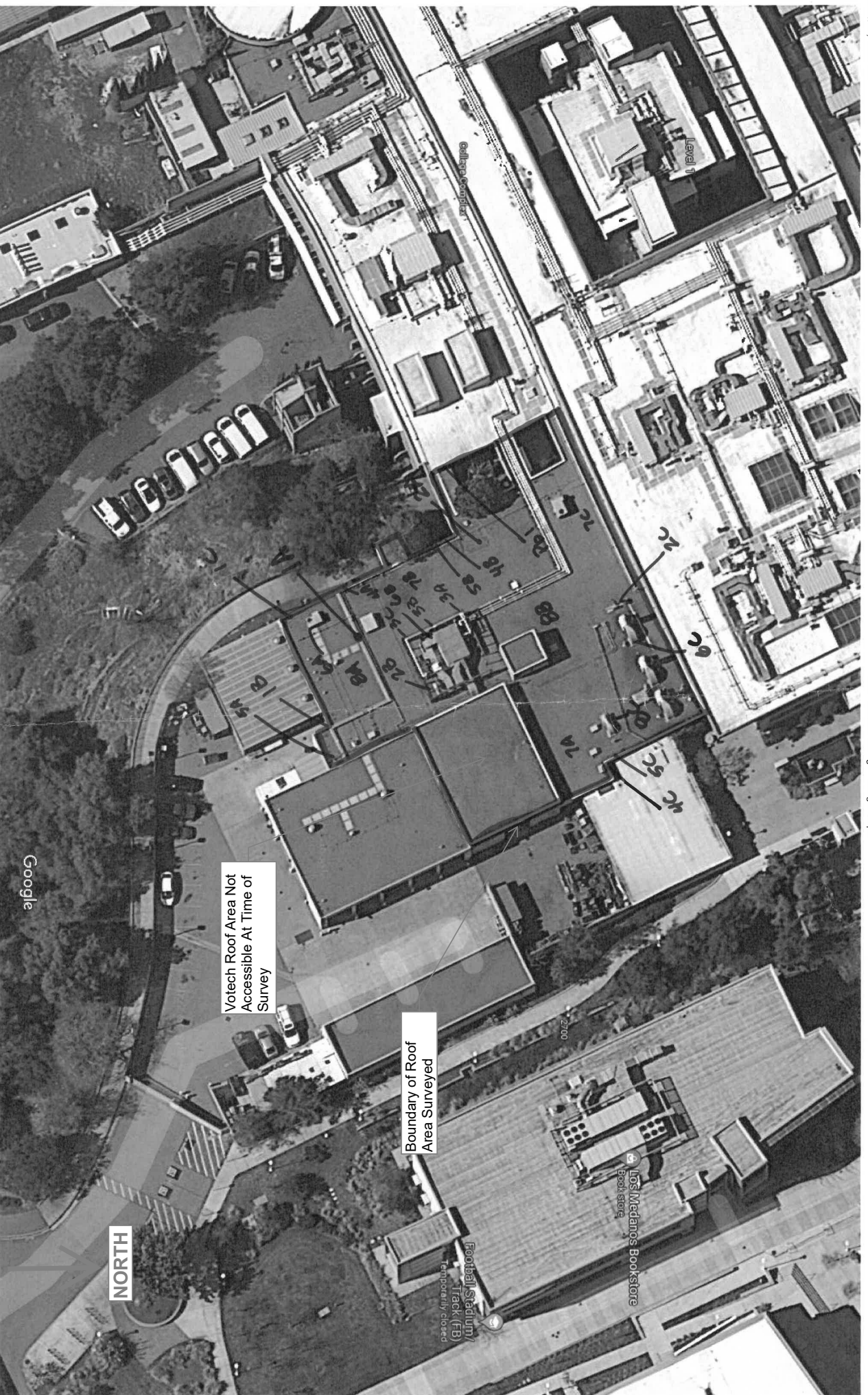
Terracon

E-MAIL REPORT TO: PROJECT MANAGER (PM)			LEAD PAINT SAMPLE DATA SHEET		
<input type="checkbox"/> denise.wall@terracon.com Engineering Assistant		<input type="checkbox"/> eric.dyer@terracon.com Engineering Assistant		* Lead Analysis _____ Flame AA (EPA 7420) _____ TTLC	
<input checked="" type="checkbox"/> PM - S. Steiner ssteiner@terracon.com		<input type="checkbox"/> PM - K. Schroeter kmschroeter@terracon.com		PAGE <u>4</u> OF <u>1</u>	
<input type="checkbox"/> PM - K. Pilgrim kmpilgrim@terracon.com	<input type="checkbox"/> PM - M. Benefield msbenefield@terracon.com	<input type="checkbox"/> PM - W. Frieszell wmfrieszell@terracon.com	<input type="checkbox"/> PM - T. Kattchee takattchee@terracon.com	<input type="checkbox"/> PM - D. Block david.block@terracon.com	

Project Name/ Address/ Building No. LOS MEDANOS COLLEGE
 Project# R1227233 Sampled By: M. REED Sampling Date: 5-3-2022
 Sample(s) sent to: ☐ MAL ☐ EMSL ☐ Aerobiology ☐ Quantem Other _____
 TAT ☐ Rush ☐ 24HRS ☐ 48HRS ☒ 3-Day

Sample ID	Paint Description and Sample Location	Condition (I/F/P)
Pb1	Paint Color: <u>WHITE</u> Substrate: <u>CONCRETE</u> Component: <u>COPING</u> Sample Location: Bldg # _____ Unit # _____ Room _____ <u>ROCK COPING - (W)</u>	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	
	Paint Color: _____ Substrate: _____ Component: _____ Sample Location: Bldg # _____ Unit # _____ Room _____	

Relinquished By: M. REED Signature: M. Reed Date/Time: 5-3-2022
 Received By: J. VITENTE Signature: [Signature] Date/Time: 4/5/22 10:35
 Received By: _____ Signature: [Signature] Date/Time: 5/6/22 10:15a



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

Michael H Reed

Name

Certification No. 08-4464

Expires on 12/18/22



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



LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



Micheal Reed

CERTIFICATE TYPE:

Lead Sampling Technician

NUMBER:

LRC-00000224

EXPIRATION DATE:

5/21/2023

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

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health
Asbestos Certification & Training Unit

1750 Howe Avenue, Suite 460

Sacramento, CA 95825

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

212150850C

034

November 02, 2021

Steffen Paul Steiner

Dear Certified Asbestos Consultant or Technician:

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

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

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

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

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

Sincerely,

Jeff Ferrell

Senior Safety Engineer

Attachment: Certification Card

cc: File

Renewal - Card Attached (Revised 06/2020)

State of California Division of Occupational Safety and Health Certified Asbestos Consultant	
Steffen Paul Steiner <small>Name</small>	
	Certification No. 92-0850
	Expires on 01/08/23
<small>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.</small>	



LEAD-RELATED CONSTRUCTION CERTIFICATE

INDIVIDUAL:



Steffen Steiner

CERTIFICATE TYPE:

Lead Inspector/Assessor

NUMBER:

LRC-00005586

EXPIRATION DATE:

5/15/2023

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

SECTION 07 52 16

MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies requirements for the new roof systems of the main building roofs as shown on the Drawings:
 - 1. Provide new 2-ply, cold process adhesive, modified bitumen roof membrane, 2-ply modified bitumen base flashings and strippings.

1.02 RELATED SECTIONS

- A. Section 07 60 05 – Roof-Related Flashing and Sheet Metal
- B. Section 07 90 05 – Roof-Related Sealants

1.03 SUBMITTALS

- A. Certificates of Compliance: Roof membrane manufacturer's certification that materials are chemically and physically compatible with each other and suitable for inclusion in roof system and are acceptable for warranty specified. Do not submit materials without obtaining membrane manufacturer's written certification. Explicitly identify in writing, difference between manufacturer's written requirements and these specifications, and membrane manufacturer's approval of proposed asphalt source.
- B. Product data: For each product specified in Part 2.
- C. Shop Drawings: Plans, elevations, sections, details, and attachments to other work.
 - 1. Base flashings, cants, and membrane termination.
- D. Samples:
 - 1. Smooth membrane sheet
 - 2. Mineral-surfaced membrane sheet.
- E. Warranties
- F. Contractor's letter certifying a minimum of 5-years commercial built-up roofing experience with list of project references, including names and phone numbers.

1.04 QUALITY ASSURANCE

A. Manufacturer Approval:

1. Installer Qualifications: Approved by manufacturer to install manufacturer's products. A single applicator with a minimum of five years previous successful experience in installations of similar systems.
2. Source Limitations: To greatest extent possible, obtain auxiliary materials for roofing system from roofing membrane manufacturer. Provide letter of acceptance from manufacturer for auxiliary materials from other sources.
3. System Approval: Provide statement from manufacturer that specified roof system meets requirements for requested warranty.
4. Comply with manufacturer's written instruction and these Specifications for roofing and associated work. Provide skilled tradesmen experienced in installation of 2-ply modified bitumen roofing systems. Foreman shall have a minimum of 5 years of previous membrane installation experience.
5. Identify in writing specific contract requirements that are not approved or warrantable by manufacturer.

B. Minimum quality standards: Comply with NRCA/ARMA publications "Quality Control Guidelines for the Application of Built-up Roofing" and "Quality Control Guidelines for Polymer Modified Bitumen Roofing". Standards within these specifications that exceed NRCA/ARMA shall prevail.

C. Regulatory Requirements

1. Federal regulations, safety standards, and codes mandated in the United States.
2. Products Manufactured in Countries Outside of United States: Products shall be approved by governing/sanctioning entity for country in which project is located and/or product is manufactured.
3. Classified by Underwriters' Laboratories, Inc. as a Class A roof covering.
4. Classified by Factory Mutual Engineering as a Class I, approved assembly.
 - a. 1-75
5. Install in accordance with manufacturer's current published application procedures and recommendations of the National Roofing Contractor's Association.

- D. Make no deviations made from this Specification or the approved shop drawings without prior written approval of Architect/Engineer.
- E. Perform entire work of this Section in accordance with the best standards of practice relating to the trades involved.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.
- B. Store materials in accordance with manufacturer's recommendations. Store rolled goods on clean raised platforms. Store other materials in dry area, protected from water and direct sunlight, and maintain at a temperature of 60 to 80 degrees Fahrenheit.
- C. Provide continuous protection of materials against deterioration.
- D. Materials Stored on Roof Levels for Immediate Use.
 - 1. Distribute to prevent concentrated loads that would impose excessive strain on deck or structural members.
 - 2. Positively secure to prevent displacement by wind.
 - 3. Tarp for protection from exposure.
 - 4. Cut and remove manufacturer's plastic "shrink wrapping" from materials during storage.

1.06 PROJECT CONDITIONS

- A. Existing Conditions: Examine existing building and decking to determine physical conditions that affect installation of roofing.
- B. Environmental Requirements:
 - 1. Apply roofing in dry weather.
 - 2. Do not expose membrane and accessories to a constant temperature in excess of 180 degrees Fahrenheit.
- C. Protection
 - 1. Provide special protection or avoid heavy traffic on completed work when ambient temperature is above 80 degrees Fahrenheit.

- 2. Restore to original condition or replace work or materials damaged during handling or roofing materials.
- D. Additive Alternate: Manufacturer Umbrella Warranty that includes roof inspection and preventative maintenance during warranty period.
- E. Emergency Equipment: Maintain on-site equipment necessary to apply emergency temporary edge seal in the event of sudden storms or inclement weather.
- F. A minimum of two fully charged 20-pounds dry chemical fire extinguishers in separate, easily accessible torch work locations at all times.

1.07 SEQUENCING AND SCHEDULING

- A. Do not install more roofing in one day than can be night sealed with roofing and flashing in the same day.

1.08 GUARANTEES AND WARRANTIES

- A. Roofing Material Manufacturer's Warranty: Install in such a manner that the roof system manufacturer will furnish a written warranty agreeing to replace/repair defective materials, including leakage of water, abnormal aging or deterioration of materials, and other failures of the materials to perform as required within warranty period. Warranty period is twenty (20) years.
- B. Contractor's Workmanship Warranty: In addition, furnish a written warranty agreeing to repair/replace defective installation and workmanship labor causing leakage of water, deterioration of materials, and other failures of the installed system, sealants, painting, coatings, and related work on this project, to perform as required within the warranty period. Warranty period is two (2) years.
- C. Additive Alternate: Provide an umbrella warranty for the specified manufacturer warranty period that includes roof inspection and preventative maintenance.

PART 2 – PRODUCTS

2.01 PRODUCT PERFORMANCE

- A. Provide products fully compatible with substrates and other assembly components. Materials shall be approved for UL Class A fire rating service and meet FM1-75 (minimum) wind uplift requirements.
- B. Modified bitumen products and systems shall comply with test methods designated in ASTM D 5147-91.
- C. Basis-of-Design: GAF. Other approved manufacturers: Johns Manville, Tremco.

2.02 MODIFIED BITUMENT SHEETS

- A. 2-ply Roofing Membrane: ASTM D 6163 and D 6164, Grade S, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for cold process adhesive application. Base Ply: Ruberoid 20 by GAF or approved equal. Top Ply: Ruberoid Mop Granule by GAF or approved equal.
- B. Modified Bitumen Flashing Ply: ASTM D 6164, Grade S, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; smooth surfaced; suitable for cold process adhesive application. Ruberoid Mop Smooth 1.5 by GAF or approved equal.
- C. Modified Bitumen Top Ply: ASTM D 6164, Grade G, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; white granule surfaced; suitable for application by torching. Base Ply: Ruberoid Mop Granule FR by GAF or approved equal.

2.03 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.
- B. Asphalt Primer: ASTM D 41
- C. Cold-Applied Adhesive: Roofing system manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied modified bitumen adhesive specially formulated for compatibility and use with roofing membrane. Field Adhesive: Matrix 102 by GAF or approved equal. Vertical Adhesive: Matrix 202 by GAF or approved equal.
- D. Sealant: One-part polyurethane, gunnable grade, high performance elastomeric sealant: ASTM C 920, Type S, Grade NS, Class 25, use NT.
- E. Cant Strip: wood fiber cant strips.
- F. Termination Bar: 34 mm wide, pre-punched metal strip of a U-shaped profile with holes 150 mm (6 inches) on center minimum spacing used to secure vertical edge of the flashing top ply.
- G. Polyethylene Slip Sheet: 6 mil minimum thick polyethylene.
- H. Lap Bleed Finish Granules: Ceramic granules sized and colored to match flashing sheet surfacing as supplied by membrane manufacturer. Color: White.
- I. Base Flashing Coating: SBR or SEBS Butyl rubber based bright white coating engineered to be applied over the specified roof system and to resist the affects of ponded water.

- J. Insulation: EnergyGuard Tapered Polyiso Foam Roof Insulation Board by GAF or approved equal.
 - K. Cover Board: High density Wood Fiberboard, ASTM C-208.
 - L. Insulation Adhesive: GAF Olybond 500 or approved equal.
 - M. Coating: Topcat MB Plus by GAF or approved equal.
 - N. Liquid-Reinforced Coating: Major Seal Liquid Flashing by GAF or approved equal.
 - O. Fluid-Applied Waterproofing: Hydrostop by GAF or approved equal.
- 2.04 Additive Alternate: Instead of the tapered insulation specified in Paragraph 2.03.J, install light-weight insulating concrete. Manufacturer: Cell-Crete Corporation or approved equal.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Verify that the substrate is suitable for membrane application.
- B. Remove any loose/flaking particles, including film from removed light-weight concrete; follow manufacturer substrate recommendations. Apply Fluid-Applied Waterproofing on the concrete deck substrate in accordance with manufacturers written installation instructions. Follow manufacturer-published drying and cure times.
- C. Prime masonry, concrete, and sheet metal surfaces in contact with bituminous materials, including sheet metal flanges (both sides) and lead sheet at drain sumps (both sides) with asphaltic primer prior to roofing or flashing installation. Allow primer to dry thoroughly prior to installing bituminous flashings.
- D. Do not deliver to site or install a material or system that has not been approved. Remove materials installed without prior approval upon Owner's request.
- E. Surfaces to receive new membrane and flashings shall be clean and thoroughly dry. Should surface moisture such as dew exist, provide necessary equipment to dry surface prior to application. Do not dry with open flames.
- F. Comply with Midwest Roofing Contractors Association MRCA publication "Safety in Torch Welded Roofing" specified to operation of liquefied petroleum gas (propane) hand torches and kettle.

- G. All reinforcing plies, self-adhering membrane envelopes, and base flashings must be installed concurrently with roof membrane installation work, and must be complete and up to date by end of each work week (i.e. Friday or next working day).

3.02 BASE PLY MEMBRANE SHEET INSTALLATION

- A. Sheets shall be laid parallel to longest dimension of tapered area to be roofed and/or perpendicular to slope of area. Application shall start at low point of area working to high point. Laps shall be parallel to slope of short dimension of tapered area and in no case shall laps buck flow of water. Stagger end laps and side laps relative to base sheet laps by 12 in., minimum.
- B. Unroll dry membrane on substrate and align with adjacent sheet, providing 3 in. side laps and 6 in. end laps. Stagger end laps of adjacent sheets by 12 in. minimum. Reroll approximately one-half of dry membrane sheet while maintaining alignment.
- C. Apply adhesive in accordance with roof manufacturer's written instructions. Membrane is not to be walked on while adhesive is not cured.
- D. Membrane sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should lap lines become misaligned while unrolling, cut sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.
- E. Inspect ply sheet application for defects. Cut wrinkles, creases, and fishmouths to relax membrane. Apply a full width strip of base ply membrane over defect in a full mopping of hot asphalt and lapped a minimum of 3 in. beyond cut. Unbonded lap seams of more than ½ in. wide shall be reheated and rolled-in.

3.03 REINFORCING PLY INSTALLATION

- A. Verify that repairs have been made to field membrane in areas adjacent to flashing area.
- B. Cut reinforcing plies for horizontal metal flange applications wide enough to provide full coverage of flange and 6 in. onto membrane. Ensure that membrane is solidly set with no voids. Provide 3 in. laps at end of strips.
- C. Cut reinforcing plies across width of roll for base flashings at walls, curbs, and other vertical applications to lengths sufficient to provide full coverage to top of vertical element, across cant, and 6-inches onto horizontal surface of built-up membrane.
- D. Provide 3-inch laps and stagger laps.

3.04 TOP PLY MEMBRANE SHEET INSTALLATION

- A. Verify that all repairs have been made to the field membrane and reinforcing plies have been properly installed. Surfaces should be free of sawdust, dirt, insulation debris, and other contaminants prior to starting installation.
- B. Sheets shall be laid perpendicular to the flow of water starting at the low point of the area and working to the high point. Unroll dry membrane and allow it to relax. Provide 3 in. side laps and 6 in. end laps, and stagger end laps of adjacent cap sheets by 24 in. Align the granulated side of the sheet over the selvage side of the adjacent sheet. While maintaining alignment, reroll approximately one-half of the dry membrane sheet.
- C. Apply adhesive in accordance with manufacturer's written instructions.
- D. Sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should the lap lines become misaligned while unrolling, cut the sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.
- E. Inspect sheet application for defects. Cut wrinkles, creases, and fishmouths to relax the membrane. Apply a full width strip of cap sheet membrane over the defect, lapped a minimum of 6 in. beyond the cut. Unbonded lap seams of more than 1/2 in. wide shall be reheated and rolled.

3.05 FLASHING AND STRIPPING SHEET INSTALLATION

- A. Apply stripping sheets using detail torch manufactured specifically for roofing membrane applications.
- B. Ensure that other wood, wood fiber, and other combustible components are enveloped with base sheet or ply sheet material. Maintain fire watch during and after torch applications.
- C. Verify repairs have been made to field membrane in area adjacent to cant to receive flashing sheet. Snap chalk line distance of 100-mm minimum from edge of reinforcing ply and on field side of roof.
- D. Install three-course flashing over termination bars and top of base flashing.

3.06 TEMPORARY PROTECTION

- A. Unfinished perimeter and penetration components: Provide temporary waterstops adequate to prevent moisture intrusion into newly installed work around exposed edges and incomplete flashing locations. Remove temporary materials completely prior to continuing with subsequent work.

- B. Tie-ins: Provide temporary waterstops at deck and tie-ins between newly installed and existing membrane as detailed. Inspect tie-ins thoroughly and repair as needed to provide watertight assembly prior to leaving site.

3.07 COATING

- A. Ensure roof system is clean, dry and acceptable for roof coating.
- B. Apply first coat over the existing exposed top ply using brush or spray applied techniques. Provide reinforcing mesh at inside and outside. Apply first coat using the manufacturer's recommended application rates but in no case less than 2 gallons per 9.2 sm.
- C. Allow first coat to dry 12-15 hours and apply second or top coat using the manufacturer's recommended application rates but in no case less than 2 gallons per 9.2 sm. The finished product shall provide a bright white appearance.

END OF SECTION

SECTION 07 54 05

THERMOPLASTIC MEMBRANE ROOFING SYSTEM

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Single-ply roof system complying with California Title 24 (Cool Roofing) regulations applied over the penthouse roof as shown on the Drawings.

1.02 RELATED SECTIONS

- A. Section 07 60 05 – Roof-Related Flashing and Sheet Metal
- B. Section 07 90 05 – Roof-Related Sealants

1.03 SCOPE

- A. Membrane and related items shall be classified by Underwriters Laboratories, Inc. as a Class A Sheathing Material for use in construction of Class A coverings and amendments.

1.04 APPLICATION

- A. This specially formulated thermoplastic-coated membrane classified as CPA in this section consists of a weft-inserted polyester scrim (18x14, 100 denier), laminated on both sides with a plasticized blend of vinyl and acrylic polymers. The membrane is pre-fabricated into various panel sizes with the largest being 2,500 sq.ft.
- B. Install new single-ply, fully-adhered reinforced PVC roofing system where designated.
- C. Install new fully-adhered membrane flashings and associated components along walls, curbs, or as shown in the Drawings and as required to properly terminate the roof membrane.
- D. Clean and restore all areas damaged, stained or otherwise affected by the Work.
- E. Include PVC repair kit with instructional course as provided by the manufacturer for use by the Owner's maintenance staff.
- F. Attend a roof-related preconstruction meeting after the submittals were transmitted and prior to the start of Work.

1.05 PHYSICAL PROPERTIES

- A. The single-ply membrane shall allow installation at any time of the year and shall provide resistance to ultra-violet rays, superb tear and puncture strength, the ability to be impervious to most caustic chemicals and acids, and show no ill effects to heat or cold.

1.06 ROOFING CONTRACTOR'S QUALIFICATIONS

- A. Contractor shall submit work history data showing successful warranted installation experience of the specified system, and of being authorized by the roofing system manufacturer to install the specified manufacturer's materials.
- B. The Contractor shall use adequate amounts of such qualified workmen to install the specified roofing system.
- C. The Contractor shall have an experienced, pre-qualified, superintendent having experience installing the roof system specified, familiar with the requirements of this project, on the job at all times when roofing system work is in progress. Training for superintendent shall include certification of completion of manufacturer's in-house training course and on-site training.

1.07 REQUIREMENTS OF THE MEMBRANE MANUFACTURER

- A. Roofing system components shall conform to the current published specifications and details of the membrane manufacturer.
- B. There shall be no deviation made from this specification without prior written approval of the membrane manufacturer and the Owner or Owner representative.
- C. Any manufacturer proposing to supply material for this project shall fourteen (14) days prior to bid date, provide financial information regarding their roofing company, i.e. a current D&B report. A manufacturer who has less than \$50,000,000 in annual roofing material sales, a net worth of less than \$3,000,000 or a history of late payments to creditors will not be permitted to submit their roofing material for use on this project. Manufacturer may be asked to submit an audited document listing the long-term warranty liability commitment of manufacturer.
- D. Provide primary thermoplastic membrane factory prefabricated roofing system from a single manufacturer, which has successfully manufactured raw materials into specified products for not less than five (5) years. No secondary private labels will be accepted. Provide secondary materials, such as insulation, gypsum board, vapor barriers as recommended and approved by manufacturer of primary materials.

- E. Products primary and secondary shall be manufactured in the United States of America by a company owned by citizens of the United States.

1.08 FIELD INSPECTION

- A. The Owner reserves the right to retain, at the Owner's expense, an independent inspection service to provide part-time or full-time inspection of the roofing system installation. The inspector shall have free access to the work area.
- B. The Contractor shall arrange for the membrane manufacturer to provide inspection of the roofing system installation. Upon completion of the installation, an inspection shall be made by a Quality Assurance Specialist of the membrane manufacturer at no extra charge to the Owner or Contractor. The inspection is to confirm the roofing system is installed in accordance with the membrane manufacturer's published specifications and details and Contract Documents.

1.09 DEFECTIVE WORK

- A. Should the roofing system not be approved by the manufacturer's technician, correcting the defective work shall be done by the Contractor until the roofing system satisfactorily meets all the specifications and manufacturer's requirements. Corrective work will be done with no additional expense to the Owner.

1.10 WARRANTIES

- A. The Contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the date of acceptance by the membrane manufacturer. Should any leaks covered under the warranty occur during this period, corrective action will be taken by the Contractor to repair the roof to the satisfaction of the Owner and the manufacturer. All corrective work will be done at no cost to the Owner.
- B. The warranty shall be full roofing system repair and/or replacement fifteen (15) year warranty covering materials and labor. The warranty shall be a no-dollar limit type and provide for completion of repairs, replacement of membrane or total replacement of the roofing system at the then current material and labor prices throughout the life of the warranty. Warranty shall contain no exclusions for ponded water, biological growth, incidental or consequential damages.
- C. Warranty shall be issued by the original manufacturer of the roofing membrane. No private label membranes will be accepted.
- D. No future work shall be done on the roof, including but without limitations, openings made for flues, vents, drains, sign braces, or other equipment fastened to or set on the roof, without prior notification of the Contractor or membrane manufacturer. Contractor or membrane manufacturer shall be given the opportunity to make the necessary roofing application recommendations, and require such recommendations are complied with. Failure to observe this

condition shall render the warranty null and void. The contractor or membrane manufacturer shall be paid for time and material expended in making recommendations or repairs occasioned by the work of others on said roof.

- E. Corrective measures on leaks shall be undertaken within seventy-two (72) hours after Owner notification has been received by the Contractor or the roofing manufacturer from the Owner.

1.11 MECHANICAL ATTACHMENT

- A. Deck membrane shall be fastened with approved fasteners, 12 inches on center along bottom of all parapet walls, elevation changes and perimeter edges.
- B. Deck membrane shall be fastened around cut-outs with approved fasteners 12 inches on center or a minimum of 1 fastener per round penetration having a diameter of not more than 6 inches.

1.12 SUBMITTALS

- A. The contractor shall submit the following:
 - 1. Written confirmation from membrane manufacturer of approved applicator status.
 - 2. Manufacturer literature on the following items:
 - a) Roofing membrane with dielectrically welded seams
 - b) Pre-manufactured parapet flashings
 - c) Pre-manufactured pipe flashing
 - d) Urethane sealant
 - e) PVC termination bar
 - f) Self-Leveling pourable sealer
 - g) Maintenance & repair instructions.
 - 3. Submit 6 in. long samples of the following items for approval prior to ordering:
 - a) Pre-manufactured pipe flashing
 - b) Termination Bar
 - c) Sample of membrane
 - d) Mechanical fasteners
 - e) Lap splice sample (factory and field)
 - f) Roofing insulation
 - 4. Shop drawings including outline of the roof and roof size, perimeter and penetration details, special details and section layout, location of factory dielectric and field welds, accessory and material list.

5. Pullout Tests: Perform pullout tests and submit engineering results of manufacturer's random location pull tests. Manufacturer shall obtain at least one pull resistance test from indicated locations on the drawings. Submit pull test results with drawing indicating the locations of the tests. Engineering results shall demonstrate the manufacturer's reasons for selection of anchorage, frequency and the seaming patterns.
6. Membrane Data: Prior to receipt of bids, Contractor shall submit all forms and other required data to roofing system manufacturer for pre-approvals. Advise building Owner or Owner Representative in writing of any recommendations made or revisions required by manufacturer to particular job conditions. In the absence of any comments, the Owner and/or his representative shall assume the manufacturer's most recently published specifications shall be followed.
7. Provide repair procedures to the Owner and/or Owner's representative.

B. INSULATION

1. Submit a tapered insulation layout drawing (full size: 24 inch x 36 inch) from the insulation manufacturer. The drawing should include an outline of the roof area and locations of drains and major roof penetrations (i.e., smoke hatches and fan units). Provide a profile of tapered sections; indicate minimum and maximum thicknesses at perimeters, and R-values for the proposed insulation system. The Contractor shall verify dimensions and existing roof penetration locations to ensure proper layout and tapered insulation quantities.
2. Submit certification from each insulation manufacturer stating the roof membrane manufacturer for the specified warranty accepts the submitted products.

1.13 PRODUCT DELIVERY, STORAGE AND HANDLING PROCEDURES

- A. Deliver materials in original unopened packaging.
- B. Containers labeled with manufacturer's name, brand name, and identification of various items.
- C. Store materials in a dry area and protect from inclement weather. Damaged materials shall be replaced at contractor's expense.
- D. Do not allow roofing membrane to come in contact or be exposed to any materials that would be detrimental to or cause degradation of the roofing membrane.

1.14 JOB CONDITIONS

- A. Environmental Conditions

1. In making field heat welds, make sure all welding surfaces are clean and free of moisture or foreign items.
2. Weather Precautions: Proceed with roofing work when existing and forecasted weather conditions permit work performance in compliance with manufacturer's recommendations.
3. Roofing system shall not be applied when the surrounding air, surface temperature, relative humidity or wind velocity is not within the range acceptable under the manufacturer's recommendations.

B. Protection

1. Prior to starting work, protect all work in an approved manner including all paving and faces of building walls. Provide special protection of the face of the building wall adjacent to hoist.
2. Complete the whole roofing section or any portion of the roof in a single day to avoid exposure to rain, dew, or moisture of any kind. If rain threatens during the day or in an emergency, protect the unfinished exposed roofing components and provide temporary water cut-offs around exposed edges and incomplete flashing areas.
3. All hoisting equipment shall bear on solid pad blocking. If on the roof surface, pad shall be large enough to evenly distribute the load to avoid crushing insulation and roof system. Pad shall consist of two separate layers of material to eliminate vibration and movement to directly affect the roofing membrane. Pad shall be of sufficient size to accommodate work tools and weights used around hoisting operations.
4. Repairs: Clean or repair surfaces damaged or soiled by operations under this contract to the satisfaction of the Owner or Owner's representative without additional cost to the Owner. These would include, but not be limited to, windows, doors, floors, walls, stairs, elevators, steps, walks, curbs, lawn areas, or other roofs.

PART 2 – MATERIALS

2.01 ROOF MEMBRANE

- A. A special formulated, permanent, thermoplastic alloy, bonded to a high tenacity, low shrinkage weft inserted polyester fabric with resistance to ultraviolet rays, microorganisms and impervious to most caustic chemicals.
- B. Membrane shall be factory dielectrically welded, prefabricated sheets up to 2,500 square feet or as determined by job condition.

- C. The new roofing shall be a prefabricated fully adhered installation of single-ply reinforced co-polymer alloy (CPA) membrane. Product: 60 mil thick membrane. Basis-of-Design: Duro-Last. Other approved manufacturers: GAF, Johns Manville, Tremco.
- D. Membrane Adhesive: Duro-Last WB or approved equal.
- E. Flashing Adhesive: Duro-Last SB or approved equal.
- F. Slip Sheet: Atlas FR-50 or approved equal
- G. Manufacturer
 - 1. Manufacturers requesting approval must submit acceptable information certifying that they are the direct manufacturer from raw material into specified membrane, factory prefabricate the membrane into roofing panels, and meet the performance and financial criteria required.
 - 2. Fire resistance of CPA roofing system shall meet UL Class A. All packaging of membrane and insulation shall bear UL Class A label.
 - 3. Membrane color shall be white.

2.02 MATERIALS

- A. Membrane-Related Materials
 - 1. All membrane components, including pipe and curb flashings, shall be factory prefabricated from the same fabric reinforced material used for the deck membrane.
 - 2. Termination Sealant: Compatible with materials to which membrane is to be bonded, conforming to Federal Specifications TT-598 and TT-S-00230C as furnished by the membrane manufacturer.
 - 3. Distribution Plates: Factory Mutual approved stress distribution plates formed from a minimum 24 gauge, G-90 C.Q. steel with a galvalume coating for insulation attachment, or 20 gauge G-90-C.Q. steel with galvalume coating or high strength polyblend for membrane attachment.
 - 4. Water Cut-Off Mastic: Compatible with materials with which it is used and furnished by the membrane manufacturer.
 - 5. Fasteners: Compatible with roof deck as furnished by the membrane manufacturer. Fasteners shall be furnished by the membrane manufacturer and be Duro-Guard coated #14 and must pass 30 cycles in the Kesternich Cabinet, DIN #50018-2 Liter. The FM approved fastener

is inserted through the hole in the distribution plate and properly secured to the roof deck.

6. Terminations/Edge Details: Shall be manufactured from rigid exterior vinyl with slotted holes for securement and furnished by membrane manufacturer. All other terminations/edge details must be approved and warranted by the membrane manufacturer.
7. Termination Bars: Duro-Last or approved equal.
8. Pourable Sealer: Duro-Last Pitch Pocket Filler or approved equal.
9. Trowelable Mastic: Duro-Last Sure-Bond-240 Mastic or approved equal.

2.03 COVERBOARD & INSULATION

- A. Cover Board: Board insulation over the filler insulation and ribs shall be a minimum of 1/4 inch thick by 4 feet by 8 feet. Dens-Deck Prime by Georgia Pacific or approved equal.
- B. Tapered and Flat Stock Insulation: A rigid isocyanurate board with factory-applied fiberglass bituminous felts on both sides. Conforming to HH-I-530A (Type II, unfaced) and C1289-02, Type II, Class 1, Grade 2 with an average density of 2.0 lbs. per cubic foot. Manufacturer: Johns Manville, ENRGY 3 or an approved equal. The board size: 4 foot by 8 foot by 1 in. thick.
- C. Adhesive: Olybond 500 or an approved equal.

2.04 MISCELLANEOUS

- A. Roofing Nails: Stainless Steel "Stronghold" type: (for use on parapet walls, wood nailers).
- B. Pipe Clamps: Stainless steel draw band clamps.
- C. Fasteners and Accessories
 1. Fasteners for securement of each layer of gypsum fire barrier board under pvc roof system through the isocyanurate insulation (where applicable) and into the wood deck shall be fluorocarbon-coated, No. 12 self-drilling, self-tapping screws, long enough to penetrate the receiving substrate 1-1/4 inches minimum and 1-1/2 inches maximum. Fasteners shall be in conformance with 470 specifications.
 2. Provide screws with stress distribution plates by Duro-Last, minimum 0.375 inch thick, 3 inch diameter.
- D. Nailers & Blocking

1. Blocking/Lumber: S4S 1500 f'c Construction Grade Douglas fir conforming to standard 15 grading and dressing rules of the West Coast Lumber Inspection Bureau, or other species of wood of equal strength. All lumber shall be grade marked at the mill and pressure treated by a method approved by the roofing membrane manufacturer: "Wolmanized" or "Osmose K-33" is acceptable.
2. Nailer Fasteners: Nailers shall be securely anchored to the deck to resist the minimum force required in the recent edition of Loss Prevention Data Sheet I-49, "Perimeter Flashing," Factory Mutual Systems.
3. PVC(Vinyl)-Clad Metal Flashing: GSM flashing coated on one side by membrane manufacturer with weldable, PVC-clad surface or pre-manufactured with factory/shop welded piece of membrane pre-welded to surface by membrane manufacturer.
4. Other Accessories: Shall be furnished and approved by the membrane manufacturer.

PART 3 – EXECUTION

3.01 SUBSTRATE INSPECTION AND PREPARATION

- A. Inspect all surfaces to receive roofing for condition that will adversely affect execution, performance, or
- B. All roof surfaces and all sloped surfaces to gutters and outlets shall be checked and approved by the roofing contractor prior to the start of the roofing work.
- C. quality of work.
- D. Install roofing material only under satisfactory conditions as specified by the membrane manufacturer.
- E. Scheduling: Schedule the roofing work in areas and sections in such a manner as to keep the new and existing insulation, roofing materials, and building dry and watertight during new roofing work.
- F. Damage sustained to the facility or contents as a result of the scheduling of roofing work shall be the Contractor's responsibility.
- G. Preparation shall comply with the membrane manufacturer's recommendations.
- H. Mechanically secure separation material units to roofing deck independent of membrane attachment and cover immediately with membrane. Butt units tightly together, limiting joint separation to 1/8 inch, maximum. Meet attachment pattern requirements of the membrane manufacturer.

- I. Prior to insulation installation, remove all dirt, debris and dust from deck surfaces with a vacuum. Insulation systems shall be installed on properly installed, clean, dry surfaces. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.
- J. Inspect insulation boards for defects, including but not limited to: broken corners, improperly adhered skins, excessive moisture content, dimensional irregularities, or other defects which may adversely effect the replacement roof system. Mark defective insulation boards and remove them from site.
- K. Cut insulation to the minimum dimension of 12 inches; the minimum surface area shall be 2 square feet.
- L. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed. All containers must bear the label and material classification of the manufacturer. Partially used containers and unlabeled containers may not be incorporated into the work.
- M. Comply with the manufacture's written instructions and these specifications. In case of discrepancies, the greater quantity and/or better quality of work, as determined by the Owner, will be provided by the contractor at no additional cost.
- N. Flashings shall be installed concurrently with the roof membrane to assure watertight terminations.
- O. Do not cut any material with a solvent or dilutant unless approve by the owner in writing.
- P. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.
- Q. Report any damaged or unsuitable deck sections immediately to the Owner's representative prior to covering and replacing.
- R. The contractor shall ensure that all applicable safety requirements are strictly followed. This includes OSHA, CALOSHA and other applicable requirements regarding work with construction equipment for workers and building occupants.
- S. Welded seams shall be checked after cooling for continuity with a dull, flat head screwdriver or other suitable object. Daily, on-site evaluation of welded seams shall be made by the Contractor at locations as directed by the Owner's representative or membrane materials representative. Two inch wide cross-section cuts shall be taken through completed seams. Correct weld displays failure from shearing of the membrane prior to separation of the weld. Each test cut cross-section area shall be patched by the Contractor at no extra charge to the Owner.

- T. Membrane specified to be fully adhered to insulation and various other horizontal and vertical substrates must be adhered completely without voids, bridging of membrane or unattached membrane.

3.02 GENERAL REQUIREMENTS

A. Precautions

1. Do not lay out or expose insulation that cannot be covered by membrane on the same day.
 2. In making field heat welds, make sure edges are clean and free of tar, mastic or other foreign items.
 3. Do not expose membrane and accessories to a constant temperature in excess of 120 degrees Fahrenheit.
 4. Sealants and adhesives should be applied according to the manufacturer's specifications and all containers shall be disposed of properly.
 5. Start securing the membrane at the highest point and work towards the drains.
 6. Storing, wheeling, or trucking directly on roof insulation or membrane surface is not recommended. Smooth, clean plywood or plank walkways, runways and platforms shall be provided as necessary.
- B. Comply with local, state, and federal regulations regarding the removal and disposal of roofing materials.
- C. Roofing shall not be applied when ambient temperature is less than 40° F. Materials which have a temperature other than the recommended application temperature of the manufacturer shall not be installed.
- D. Surfaces to receive membrane or flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. No open flames will be allowed.
- E. Completed roof areas shall not be trafficked. Work shall be coordinated to prevent this situation by working toward the roof edges and access ways. Should access to completed roof areas be necessary, the Contractor shall provide (membrane covered) plywood protection for the trafficked areas.
- F. Temporary waterstops shall be installed at the end of each day's work, and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials and shall not emit dangerous or incompatible fumes.

- G. The Contractor is cautioned that thermoplastic membranes are incompatible with oil-based and asphaltic-based cement. Creosote and penta-based materials are also incompatible. The Contractor should consult the manufacturer with respect to material compatibility and shall provide protection against contamination of PVC membrane and flashings.
- H. The Contractor shall provide necessary temporary protection and barriers to segregate the work area and to prevent damages to adjacent areas.
- I. Prior to and during application, dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping or similar methods.
- J. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- K. The Contractor shall be a licensed and approved applicator recommended by the manufacturer of the roof system specified. The Contractor shall notify the manufacturer prior to initiating the construction. It is the responsibility of the Contractor to arrange for the membrane manufacturer's technical representative to be on site when construction commences and a minimum of once per week until construction is completed. The Owner and Owner's Representative should be notified of scheduled visits so that they may attend.
- L. The building will be open to normal use during the time of construction. The Contractor shall take all precautions to create as little disruption as possible during the course of the work.
- M. The Contractor shall provide and equip as many work crews as is necessary to complete the project within the Contract period and according to the Contract Specifications without sacrificing quality.
- N. The Contractor shall closely follow adhesive application rates when adhering membranes and flashings. The contents within adhesive containers shall be thoroughly mixed prior to application. Submit adhesive container tags to the Owner's Representative on a daily basis.

3.03 INSULATION INSTALLATION

- A. Tapered Insulation
 - 1. Insulation shall be installed with approved adhesive. Comply with FM I-75.
 - 2. Insulation shall have a maximum dimension of 4 feet by 8 feet
 - 3. The insulation shall be staggered 50% from row to row.

4. Butt each insulation board firmly to the adjacent board. Do not jam insulation boards or allow cracks between insulation boards.
5. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

B. Crickets

1. Install coverboard over tapered isocyanurate insulation. Crickets shall be constructed to ensure a minimum slope of 1/2 in. per foot along the valley towards the drainage point.
2. Butt each insulation board firmly to the adjacent board. Do not jam insulation boards or allow cracks between insulation boards.
3. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

3.04 COVERBOARD INSTALLATION

A. Filler Insulation

1. Cover board shall be installed with approved adhesive.
2. Cover boards shall have a maximum dimension of 4 feet by 8 feet.
3. The cover boards shall be staggered 50% from row to row.
4. Butt each insulation board firmly to the adjacent board. Do not jam cover boards or allow cracks between cover boards.
5. Cut boards to allow a maximum ¼ in. gap away from vertical surfaces.

3.05 MEMBRANE INSTALLATION

A. Layout

1. Select the proper factory marked rolled sheet of roofing membrane for an outside corner or high point.
2. Orient the roofing membrane so the membrane is perpendicular to the flow of the roof.
3. When laying out, pull the membrane tight.

B. Roof Sections

The intent of this Specification Section is to provide the Owner with a fully adhered membrane, 100% bonded to the substrate.

1. Ensure all bituminous substances and contaminants of the original system are removed. Clean flashings, etc., of all bitumen residue.
2. Install membrane system in accordance with the recommendations and requirements of the membrane materials manufacturer, as amended in these Specifications.
3. Water-based adhesive shall be used as the contact adhesive for the roof membrane.
4. Solvent-based adhesive, specially formulated for vertical surfaces, shall be used as the contact adhesive for flashings installed.
5. Inspect surface of roof insulation prior to installation of roof membrane. Surfaces shall be clean and smooth with no excessive surface roughness. Contaminated surfaces or unsound surfaces shall be cleaned and voids shall be filled.
6. Over the properly installed and prepared gypsum fiberglass mat fire barrier board substrate, the water-based adhesive shall be poured out of the pail and spread using 9 in. medium nap paint roller. The adhesive shall be applied at a rate of 1 gallons per 70 - 90 square feet or as recommended otherwise the manufacturer. Apply the adhesive in an even coating with no globs, puddles, or similar irregularities. Allow the adhesive to dry slightly but not completely.
7. The membrane shall be carefully unrolled into the wet adhesive. The adhesive shall be spread and the membrane rolled out until the entire roll has been set into adhesive. The membrane shall be pressed firmly in place with a weighted foam covered lawn roller by frequent rolls in two directions. Lap the adjacent sheets a minimum of 3 inches. Note that adhesive shall not be applied in seam areas.

C. Field Welding

1. Weld adjacent sheets in accordance with the manufacturer's written instructions. Both sides and end lap joints shall be hot-air welded. Hand welded laps shall be 4 inches wide minimum; machine welded laps shall be 3 inches wide minimum. Sheets must be welded immediately after installation.
2. Use welding equipment provided by the membrane materials manufacturer. All technicians shall successfully complete a course of instruction provided by the roof membrane manufacturer's representatives prior to welding. All weld surfaces must be clean and dry. No adhesive or other contaminant shall be present within the lap areas.

3. Hand welded seams shall be completed in three (3) stages. Warm up equipment for at least one (1) minute prior to welding.
 - a. Tack weld the lap every 3 feet to hold seam in place.
 - b. Weld the back edge of the lap with a thin, continuous weld to prevent loss of the hot air during the final weld.
 - c. Insert the hot air nozzle into the lap, keeping the welding equipment at a 45° angle to the side lap. Once the material starts to flow, apply the hand roller at a right angle to the welding gun and press lightly. For straight laps, use the 1-1/2 inch wide nozzle. Correct weld speed will complete approximately 20 inches per minute. The hot air weld equipment shall have temperature adjustments to provide this proper speed and weld.
4. Alternately, an automatic lap welding machine may be used. Follow the manufacturer's strict requirements, instructions and local codes for electric supply, grounding and over current protection. The automatic weld machines power requirement is 218 to 230 volts at 30 amps. The availability of this voltage shall be verified at the work site on the roof before using the automatic welding machine. The use of portable generators is recommended. Prior to utilizing the automatic weld machine on the roof, detailed instructions and operating procedure shall be obtained from the membrane manufacturer's technical representatives.
5. Terminate the membrane at perimeters and penetrations once welding of adjacent sheet seams is completed. Membrane shall be terminated with the manufacturer's recommended metal termination bar fastened at 6 inches (maximum) on center.
6. Flashings shall be installed concurrently with the roof membrane in order to achieve a watertight condition as the work progresses. When a situation arises where a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal utilizing a raised temporary waterstop. Sweep back and totally clean a 6 inch edge along the existing roof and set a 2 inch x 4 inch stud atop the prepared area in roof cement. Carry the new membrane up and over 2 inch x 4 inch waterstop. Seal the edge of the membrane in a continuous heavy application of water cut-off mastic. Weight the membrane down in the sealant with a 2 inch x 10 inch wood member with ballast on top. Ballast should be approximately 20 pounds per linear foot. When restarting work, remove all sealant, membrane, insulation fillers, etc. from the work area. Do not reuse any of the temporary cut-off material in the new work. Cut off contaminated membrane and dispose of immediately. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.

7. Inspect all field welds with a probe. Re-weld loose laps at the end of each workday.

D. Perimeter Nailing

1. The membrane shall be mechanically fastened at all roof perimeters, parapets, curbs, walls, penetrations, in accordance with the Contract Documents and roofing manufacturer's specifications and details.

E. Cut-Outs

1. Make cut-outs in roofing membrane for protrusions through the roof. Some situations might require that the deck membrane be slit to the section edge for fitting around protrusions.
2. Fasten around cut-outs with approved fasteners, 12 inches on center or a minimum of one per side.
3. The skirts on factory prefabricated accessories when welded to deck will cover these.

F. Membrane Flashings

1. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary membrane flashings shall be allowed without the prior written approval of the Owner. Approval shall only be given for specific locations on specific dates.
2. Follow the manufacturer's requirements and these Specifications. Ensure that shop drawings and material submittals have been approved.
3. Fully adhere polyester separation layer at specified locations as detailed. Ensure that felt isolates bituminous products (new and existing) from new PVC flashings.
4. Wall flashings shall be fully adhered to the plywood/wood substrates using a solvent-based adhesive. Cut the Membrane in six (6) foot long sections. Over the plywood apply the adhesive at a rate of 1 gallon per 50-60 square feet using 9-inch medium nap paint roller. The adhesive shall be applied in a smooth, even coating with no holidays, globs, puddles, or similar irregularities. Coat the underside of the membrane at a rate of 1 gallon per 50-60 square feet. Do not apply adhesive in lap areas. Allow the adhesive to become tacky when touched with a dry finger on both surfaces. The product on the membrane cannot be permitted to dry completely. The coated membrane shall be rolled onto the coated substrate being careful to avoid wrinkles. Adjacent sheets shall be overlapped 3-inches. Bring the top of the membrane up and over the parapet wall or wood blocking and secure with annular ring nails as shown in the contract drawings. The wall flashing membrane shall extend 4 inches onto the roof membrane.
5. Membrane flashings shall be hot-air welded at their seams and at their connections with the roof membrane or membrane clad metal flashings.
6. Vent pipes shall be flashed to the top of the pipe. Asphalt contaminated vent pipes which cannot be thoroughly cleaned shall be wrapped with aluminum tape prior to the installation of membrane flashing. Field or shop fabricated pipe caps of the PVC membrane shall be installed as shown in the detail drawings. Provide stainless steel pipe clamp terminations at all locations.
7. Membrane termination shall be flashed in with reinforced membrane. Termination bars shall be utilized as detailed in the contract drawings. Set termination bars in a bed of sealant with fasteners spaced at 3 inches on center.

3.06 SPECIAL REQUIREMENTS:

- A. Do not apply adhesive in lap areas

- B. The applicator shall keep track of the amount of adhesive used to confirm adhesive rate.

3.07 CLEAN-UP

- A. Upon completion of the membrane installation, the Contractor shall remove all foreign matter, rubbish and scrap material from the roof.
- B. The membrane surface shall be cleaned using cleaners recommended by the membrane manufacturer.

3.08 INSPECTION & WARRANTY

- A. Inspection: The Contractor shall submit all required drawings, details, and completed questionnaires to the roofing manufacturer before obtaining the specified warranty. After the authorized Manufacturer has inspected the roof for determining acceptability for warranty issuance, deficiencies on the final inspection report shall be corrected by the Contractor and made ready for reinspection within five (5) working days.
- B. Warranty: Upon receipt of required materials, certifying inspection, and acceptance of the roofing system by the roofing manufacturer, the warranty shall be duly executed and issued to the Owner.

3.09 REPAIRS

- A. Future repairs or additions to the roofing system shall be made using the heat welding process.
- B. Adhesive bonded or butyl tape repairs shall not be allowed for the life of the roof.
- C. Contractor shall provide repair procedures to the Owner and/or Owner's representative.

3.10 CONSTRUCTION DAMAGE

- A. Upon completion of work, repair or replace as required, building materials damaged as a result of the roofing operations. Match existing materials and construction as determined by the Owner.

END OF SECTION

SECTION 07 60 05

ROOF-RELATED FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Sheet metal flashings shown on the Drawings

1.02 RELATED WORK

- A. Section 07 52 16 – Modified Bitumen Roofing
- B. Section 07 90 00 – Sealants

1.03 REFERENCES

- A. ASTM A153 – Zinc Coating Hop Dip
- B. SMACNA – Architectural Sheet Metal Manual
- C. MIL-S-687ZB – General Specifications for Soldering Process
- D. AWS D1.1 – Structural Welding Code

1.04 SUBMITTALS

- A. Submit three (3), 6 inch by 6 inch samples, of each type and thickness of sheet metal to be used in the construction.
- B. Submit three (3), samples of gutter assembly and flashings to be used in the construction.
- C. Submit shop drawings with dimensions of all sheet metal details.
- D. Submit mill certification.
- E. Submit manufacturer literature for all accessory items in Part 2 of this Section.

1.05 STORAGE

- A. Stack performed material to prevent twisting, bending, or abrasion, and provide ventilation.
- B. Prevent contact with materials during storage, which may cause discoloration, staining or damage.

PART 2 - PRODUCTS

2.01 SHEET MATERIALS

A. Sheet Metal

1. 22 gauge galvanized steel: ASTM A123 and A525.

B. Lead

1. Minimum weight of 4 pounds per square foot.

C. Steel bars

1. ASTM A36.

2.02 FINISHES

A. Not applicable.

2.03 ACCESSORIES

A. Fasteners

1. Sheet Metal-to-Wood Blocking: No.12, 1-1/2 inch minimum long Stubbs stainless steel nails, annular-thread shank.
2. Sheet Metal-to-Sheet Metal: No. 10, 1 inch long stainless steel sheet metal screws with metal capped neoprene washers.
3. New Flashing-to-Existing: Stainless steel pop rivets.
4. Unistrut: 3/8-inch diameter lag bolts, 3 inch long minimum.

B. Solder

1. 50% tin and 50% lead.
2. Flux: ASTM B32

C. Sealant and Backer Rod

1. Refer to Section 07 90 05 – Sealants.

D. Miscellaneous

1. Band clamps: Stainless steel, 1/2 inch wide, screw adjustable clamps.
2. Cold galvanized compound: Zinc-rich, spray-applied compound.

3. Reglet: SM Surface-Mounted Reglet by Fry Reglet or approved equal. Galvanized sheet metal, 24 gauge.
4. Drain Pipes: Schedule 40 cast iron, wall thickness $\frac{1}{4}$ in.

2.04 FABRICATION SCHEDULE

- A. All sheet metal to be 22-gauge galvanized steel except as noted below.
- B. Lead
 1. Plumbing Vent Flashings and Caps

2.05 FABRICATION

- A. Form sections true to shape, accurate in size, square and free from distortion or defects.
- B. Form pieces to maximum length of 8 feet.
- C. Mechanically fasten and solder watertight joints, splices and transitions which are not designed for expansion.
 1. Fasten metal for strength and watertightness by solid riveting, welding or forming double lock seams.
 2. Sealant for water tightness by soldering: after soldering, immediately remove all traces of acid or flux with appropriate neutralizer, followed by repeated washing and scrubbing.
 3. Sealant-filled joints may not be substituted for solder joints: Use sealant as indicated on the Drawings.
- D. Do not fabricate any sheet metal components without approved shop drawings and fabrication samples.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Field measure site conditions prior to fabricating Work Notify Architect/Engineer immediately of any inconsistency between existing conditions and the drawings.
- B. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

- A. Allow substrates to dry thoroughly. Do not proceed with flashing application if moisture content of exposed wood is above 19%.

B. Clean debris from all substrates.

3.03 INSTALLATION

A. General

1. Proceed with sheet metal installation in conjunction with roofing and flashing in each area.
2. Do not dilute primers, coatings, or sealants.
3. Keep containers closed except when removing materials from them.
4. Field fabricate sheet metal following the same criteria set forth in Paragraph 2.05 – FABRICATION.
5. Except as otherwise specifically shown on the Drawings or approved shop drawings, conform to the drawing details included in the SMACNA manual.
6. Comply with Military Specification MIL-S-6872B entitled, "General Specifications for Soldering Process" when forming soldered joints. Use conduction soldering methods. Areas to be joined shall be cleaned of all oil, grease, pencil marks, paint, dirt or other foreign substances. Remove all burrs using files, grinding stones or other methods. Hold parts in place using clamps, jigs and supports or by self-fixturing. If parts are tack-soldered to hold them in place, the area of tack-soldering shall be reworked into the final soldering. Parts cannot be allowed to move during the soldering process.
7. All corners, transition and termination pieces shall be mechanically fastened and soldered to provide strength and a weatherproof connection.
8. Apply sealant over the head when using pop rivets for fastening
9. All sheet metal edges shall be hemmed 1/4-inch minimum.
10. Roof deck flanges shall be 4 inches wide minimum.
11. Set roof flanges in roof cement and nail 3 inches on center staggered.
12. Prime and flash all roof flanges (top and bottom) in accordance with this Specification.
13. Flux shall be applied to all surfaces that will receive solder. Flux-cored solder shall not be used. Flux shall be fluid when heated and be effective in removing oxides and other impurities from the joint. Flux should be readily displaced by the molten solder.

14. Areas to be joined shall be heated above the liquious temperature of the solder. To deliver maximum heat, the copper bit of the soldering iron shall be applied at the right angle so that the flat side of the iron's bit provides maximum contact area. Solder shall be applied to the joint and not the bit of the iron. Allow solder to flow in place to provide a minimum 1 inch final width of solder over the joint. Joint shall not be disturbed until it has been allowed to completely cool. After soldering, completely remove all flux and acid by washing and scrubbing with a neutralizing agent.

B. Hook Strips

1. Hook strips shall be formed with a 3 inch face and a 3/4 inch kick, bent out at a 60° angle to the face (or 30° to the wall).
2. Secure continuous hook strips to wood blocking with nails spaced at 6 inches on center.
3. Provide 1/8 inch butt joints between hook strip sections.

C. Securement Clips

1. Securement clips shall be 6 inches long, 2 inches wide, and hemmed along each side of the long dimension.
2. Secure clips to substrate with specified fasteners. Use a minimum of two (2) clips. Space clips 32" o.c. minimum.
3. Bend clips a minimum of 1 inch over bottom drip edge of counterflashing and crimp tightly.

D. Counterflashing

1. Install counterflashing in accordance with approved shop drawings and manufacturer's product data to comply with specified performance requirements. Reglet and counter flashing components shall be true to line, without buckling, creasing, warp or bind in finished surfaces.
2. Coordinate counterflashing at roof surfaces with roofing work to provide weather tight condition at roof terminations.
3. Isolate dissimilar materials to prevent electrolysis. Separate bituminous coating.
4. Secure counterflashing using continuous cleats, clips and fasteners in accordance with product data and as indicated.

E. Skirt Flashing

1. Skirt flashings shall be formed with a 4 inch face and a $\frac{3}{4}$ inch kick, bent out a 60° angle to the face (or 30° to the wall).
2. Secure skirt flashings to the existing counterflashings with stainless steel rivets at all areas where existing counterflashings are being reused. Clean existing counterflashing and apply sealant over rivets.

F. Gravel Stop and Edge Metal

1. Secure continuous hook strips with the specified fasteners as previously specified.
2. Form gravel stop/edge metal cover plates to the dimensions indicated.
3. Apply asphalt primer to both the top and bottom sides of the roof deck flanges.
4. Provide 6 inch wide cover plates, set in full bed of sealant over all 1/8-inch butt joints in sheet metal sections. Hem edges of cover plates to fit snugly against fascias. Stagger butt joints between the hook strips and the fascias.

G. Sleeve Flashing and Storm Hoods

1. Storm hood and sleeve flashing shall be formed with locked and soldered seams. Sleeves shall have integral deck flanges with hemmed edges to the configurations shown on the Drawings. Storm hood shall counterflashing sleeves flashing 3 inches, minimum.
2. Secure sleeve flashings to wood blocking and flash into roof system.
3. Storm hood shall be secured to exhaust pipe with stainless steel band clamp. Set storm hood in full bed of sealant.

H. Vent Pipes

1. Provide new vent pipe sleeve with integral roof deck flange and cap. All seams shall be locked and soldered.
2. Slide sleeve over vent pipe and secure and flash flange to wood blocking. Set cap in full bed of sealant over top of vent pipe.
3. Prior to installing flashing extend vent pipes as required in accordance with acceptable plumbing standards and codes.

I. Mechanical Unit Cover Fasteners

1. Secure existing light mechanical unit covers to wood curbs with Number 10 stainless steel wood screws with integral metal-capped neoprene washers. Install screws at 12 inches on center, maximum, with a minimum of two screws per side of curb.
2. Secure mechanical unit to curb using 1/4-inch lag bolts installed through EPDM gasketed metal cap washer. Set EPDM gasket in bed of polyurethane sealant.

K. Vent, Duct, and Fan Flashings

1. Contractor shall provide samples or shop drawing for new vent, duct, and pan flashing with sheet metal covers. Do not fabricate prior to approval of samples and shop drawings.
2. Flashings shall be fabricated to be vandal resistant with solid welds.

END OF SECTION

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Installation of one wall-mounted ladder and two ship ladders.

1.02 RELATED SECTIONS

- A. Section 07 52 16 – Modified Bituminous Membrane Roofing
- B. Section 07 60 05 – Roof-Related Sheet Metal

1.03 REFERENCES

- A. AA – Aluminum Association
- B. ASTM B209 – Standard Specification for Aluminum and Aluminum – Alloy Sheet and Plate.
- C. ASTM B221 – Standard Specification for Aluminum – Alloy Extruded Bars
- D. OSHA 1910.27 – Fixed Ladders

1.04 SUBMITTALS

- A. Product Data: For each product specified in Part 2.
- B. Shop Drawings
 - 1. Detail fabrication and erection of each ladder indicated on the Drawings. Include plans, elevations, sections and details of metal fabrications and the associated connection.

1.05 QUALITY ASSURANCE

- A. Manufacture Qualifications: A firm experienced in producing aluminum metal ladders similar to these shown on the Drawings.
 - 1. Record of successful in-service performance.
 - 2. Sufficient production capacity to produce required units.

3. Professional engineering competent in design and structural analysis to fabricate ladders in compliance with local codes.

- B. Installer Qualifications: Competent and experienced company in installing ladders.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacture's unopened packaging until ready for installation.

1.07 PROJECT CONDITIONS

- A. Field verify the dimensions before fabrication.

1.08 WARRANTY

- A. Manufacturer: 5 years.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. O'Keefe's, inc. or approved equal.

2.02 LADDERS

- A. Fixed Wall Ladder: Model 500 by O'Keefe's, Inc. or approved equal.
- B. Ship Ladder: Model 520 by O'Keefe's, Inc. or approved equal.

2.03 FINISHES

- A. Mill finish, as extruded.

2.04 MATERIALS

- A. Aluminum Sheet: Alloy 5005 – H34 to comply with ASTM B209.
- B. Aluminum Extrusions: Alloy 6063 – T6 to comply with ASTM B221.

2.05 FABRICATION

- A. Rungs: Not less than 1-1/4 inches (32 mm) in section and 18-3/8 inches (467mm) long, formed from tubular aluminum extrusions. Squared and deeply serrated on all sides.
 1. Rungs shall withstand a 1,500 (454 kg) load without deformation or failure.

- B. Channel Side Rails: Not less than 1/8 inch (3 mm) wall thickness by 3 inches (76 mm) wide.
- C. Heavy Duty Tubular Side Rails: Assembled from two interlocking aluminum extrusions no less than 1/8 inch (3 mm) wall thickness by 3 inches (76 mm) wide. Construction shall be self-locking stainless steel fasteners, full penetration TIG welds and clean, smooth and burr-free surfaces.
- D. Ship Ladders: Not less than 1-1/4 inches (32mm) high, 4-1/8 inch (105 mm) deep and 2 feet (610 mm) wide; tread spacing shall be 1 foot (305 mm) on center. Handrails shall be aluminum pipe, not less than 1-1/2 inches (38 mm) in diameter with hemispheric end caps.
- E. Landing Platform: 1-1/2 inches (38 mm) or greater diameter, tubular aluminum guardrails and decks of serrated aluminum treads.
- F. Ship Ladder Seismic Bottom Support: Manufacturer's standard; two isolation bearings per stringer.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Coordinate anchorages. Furnish setting drawings, templates, and anchorage structural loads for fastener resistance.
- B. Do not begin installation until supporting structure is complete and ladder installation will not interfere with supporting structure work.
- C. If supporting structure is the responsibility of another installer, notify Architect of unsatisfactory supporting work before proceeding.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction.

3.03 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 90 05

ROOF-RELATED SEALANTS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Sealant for sheet metal joints
- B. Sealant for hot pipes

1.02 RELATED SECTIONS

- A. Section 07 52 16 – Modified Bitumen Membrane Roofing
- B. Section 07 60 00 – Flashing and Sheet Metal

1.03 SPECIAL JOB CONDITIONS

- A. Comply with application temperatures of the manufacturer.
- B. The Contractor shall utilize skilled and experienced specialty workers to install the Work. Experienced trade workers shall be utilized for all aspects of the Work.

1.04 SUBMITTALS

- A. Submit Manufacturer literature, specifications and color charts for the sealants and primers.

PART 2 - MATERIALS

2.01 SEALANT

- A. Metal-to-metal joints: One-part polyurethane conforming to ASTM C920 such as NP-1 by Sonneborne. Color to be selected by Owner.
- B. Concealed metal-to-metal joints: One-part butyl sealant conforming to ASTM C1085.
- C. Hot pipes: A non-corrosive one-part silicone, with a service temperature from - 60° F to +400° F, such as Dow Corning 999-A or approved equal.

2.02 ACCESSORIES

- A. Backer rod: Round, closed cell polyethylene with a waxed surface; size shall be sufficient to be compressed 25% to fit the joint width.
- B. Primer, cleaners and similar joint preparation materials shall be as recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.01 GENERAL WORKMANSHIP

- A. All materials shall be stored in secure, dry locations and be protected from the environment.
- B. Follow manufacturer's environmental limitations and material storage requirements.
- C. Provide all devices (including heaters and insulation) necessary to maintain the correct temperature and humidity for proper curing.

3.02 CONCEALED SHEET METAL LOCATIONS

- A. Provide sealant at all concealed sheet metal joints and as detailed.
- B. Use full beads of sealant along entire length of joints.

3.03 HIGH TEMPERATURE SEALANT

- A. Install high temperature sealant at high temperature locations where required. Provide a full bead of sealant beneath storm hood locations as detailed.

3.04 REPRESENTATIVE SAMPLING

- A. Extract representative samples of new sealant joints for inspection as directed by and in the presence of the Owner.

END OF SECTION