

SPECIFICATIONS
FOR THE CONSTRUCTION
OF
CHUALAR SCHOOL
ROOF REPLACEMENT
24285 LINCOLN STREET, CHUALAR, CA 93925
FOR
CHUALAR UNION SCHOOL DISTRICT
CHUALAR, CALIFORNIA

PROJECT NO. 25068



Prepared By:
David Peartree

PEARTREE+BELLI ARCHITECTS
235 Monterey Street, Suite B
Salinas, CA 93901
Telephone (831) 424-4620

TABLE OF CONTENTS

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

See Chualar Union School District Front End Documents

DIVISION 01 – GENERAL REQUIREMENTS

011000 Summary

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

061000 Rough Carpentry

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

070150.19 Preparation for Re-Roofing
073113 Asphalt Shingles
075113 Built-Up Asphalt Roofing
076200 Sheet Metal Flashing and Trim
077100 Roof Specialties
077200 Roof Accessories

END OF TABLE OF CONTENTS

NOTICE TO BIDDERS

Notice is hereby given that the Chualar Union School District (hereinafter referred to as "Owner") will receive sealed bids prior to the date and time stated for the bid opening for the award of a contract to construct the Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 (the "Contract"), as per the Contract Documents, including the drawings and specifications, which may now be obtained electronically from the Architect, who is Peartree+Belli Architects, Inc., 235 Monterey Street, Suite B, Salinas, CA 93901, 831-424-4620.

The Owner reserves the right to add or deduct any of the additive or deductive items after the lowest responsible and responsive bidder is determined. The lowest bid shall be determined on the total of the bid prices on the base bid and the following additive and deductive items: Additive Alternate 1.

This Contract is not subject to prequalification. See Instructions to Bidders for details.

The Director of Industrial Relations of the State of California, in the manner provided by law, has ascertained the general prevailing rate of per diem wages and rate for legal holidays and overtime work. The Contractor must pay for any labor therein described or classified in an amount not less than the rates specified. Copies of the required rates are on file at the Owner's business office and are available on request.

Public works projects shall be subject to compliance monitoring and enforcement by the Department of Industrial Relations. For all projects over Twenty-Five Thousand Dollars (\$25,000), a contractor or subcontractor shall not be qualified to submit a bid or to be listed in a bid proposal subject to the requirements of Public Contract Code section 4104 unless currently registered and qualified under Labor Code section 1725.5 to perform public work as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code. For all projects over Twenty-Five Thousand Dollars (\$25,000), a contractor or subcontractor shall not be qualified to enter into, or engage in the performance of, any contract of public work (as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code) unless currently registered and qualified under Labor Code section 1725.5 to perform public work and proof of registration is provided.

For all projects over Twenty-Five Thousand Dollars (\$25,000), the bidder shall state the public works contractor registration number on the Designation of Subcontractors form for each subcontractor performing more than one-half of one percent (0.5%) of the bidder's total bid.

The Contract Time shall be one hundred eighty (180) calendar days, and liquidated damages for delay shall accrue. See Article III of the Agreement for details.

Bids must be sealed and filed in the Administration Office at 24285 Lincoln Street, Chualar, CA, 93925 on Thursday, November 20, 2025, before 2:00 p.m. on the clock designated by the Owner or its representative as the bid clock. No bid will be accepted by the Owner after this time. Facsimile (FAX) copies of the bid will not be accepted.

Bids may be opened immediately after the above deadline for submittal, or at a later time, within the Owner's discretion.

Mandatory pre-bid conference will be held on Tuesday, October 28, 2025, at 10:00 a.m., at the Administration Office, 24285 Lincoln Street, Chualar, CA 93925. Bidders not attending one of the conferences will be disqualified.

Bids must be accompanied by a bidder's bond, cashier's check, or certified check for at least ten percent (10%) of the amount of the base bid and made payable to the Owner, as detailed in the Contract Documents.

Owner, or its designee, has determined that certain materials, services, products or things designated by specific brand or trade name shall not be subject to Public Contract Code section 3400(a) in order that a field test or experiment may be made to determine the product's suitability for future use; in order to match other materials, services, products or things in use on a particular Owner public improvement either completed or in the course of completion; in order to obtain a necessary item that is only available from one source; and in order to respond to an emergency declared by Owner.

Pursuant to the Contract Documents, the successful bidder will be required to furnish a Payment (Labor and Material) Bond in the amount of one hundred percent (100%) of the Contract Sum, and a Faithful Performance Bond in the amount of one hundred percent (100%) of the Contract Sum.

The successful bidder will be allowed to substitute securities or establish an escrow in lieu of retainage, pursuant to Public Contract Code Section 22300, and as described in the Agreement Between Owner and Contractor and General Conditions.

The Owner will not consider or accept any bids from contractors who are not licensed to do business in the State of California, in accordance with the California Public Contract Code, providing for the licensing of contractors. In accordance with Section 3300 of said Code, the bidder shall have a Class "C-39" license at the time of award and shall maintain that license in good standing through Completion of the Contract and all applicable warranty periods.

Advertisement (Public Contract Code §22037):

Publication Date (≥14 days before bid deadline)

October 17, 2025

AND

Date of Mail and E-Mail to Trade Journals (≥15 days before bid deadline)

October 17, 2025

By: David Peartree

Its: Representatives

BID FORM

CHUALAR UNION SCHOOL DISTRICT
24285 LINCOLN STREET, ADMINISTRATION OFFICE
CHUALAR, CALIFORNIA 93925

Dear Board Members:

The undersigned, doing business under the firm name of _____, hereby proposes and agrees to enter into a contract, with the Chualar Union School District ("Owner"), to furnish any and all labor, materials, applicable taxes, equipment and services for the completion of Work as described hereinafter and in the Contract Documents as Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 (the "Contract").

The Contract Documents were prepared by Peartree+Belli Architects, Inc., 235 Monterey Street, Suite B, Salinas, CA 93901, 831-424-4620.

Bid Amount (Base Bid):

The undersigned proposes to furnish such labor, materials, applicable taxes, equipment and services for the amount of _____ Dollars (\$ _____).

Alternate Bid Scopes:

In addition to the above base bid, the undersigned bidder proposes and agrees to perform the Contract with the following alternate scope(s) of work for the listed price adjustment(s) if the Owner elects to include one or more of them in the Contract at the time of award:

ALTERNATE ITEM NO. 1: Gutters, downspouts, and associated work at Buildings A-D for the sum/ of _____ Dollars (\$ _____).

Miscellaneous:

The low bid shall be determined as described in the Notice to Bidders.

The undersigned shall, within ten (10) days after the date of such mailing, faxing, or delivering of a Notice of Award or prior to the commencement of the Work, whichever is earlier, execute and deliver an agreement in the form of agreement present in these Contract Documents and give Performance and Payment Bonds in accordance with the Instructions to Bidders.

The undersigned declares that it has read and understands the Contract Documents, including but not limited to the Notice to Bidders, the Instructions to Bidders, the Agreement, the General Conditions, the Drawings, the Specifications, and any Special Conditions.

Check one of the following boxes:

- ☐ The undersigned bidder is prequalified with the Owner pursuant to Public Contract Code section 20111.6 to submit a bid in the above amount for this Contract.
- ☐ Prequalification pursuant to Public Contract Code section 20111.6 is not required for this Contract.

The undersigned hereby designates as the office to which such Notice of Award of Contract may be mailed, faxed, or delivered:

Our Public Liability and Property Damage Insurance is placed with:

Our Workers' Compensation Insurance is placed with:

Circular letters, bulletins, addenda, etc., bound with the specifications or issued during the time of bidding are included in the bid, and, in Completing the Contract, they are to become a part thereof.

The receipt of the following addenda to the specifications is acknowledged:

Addendum No. _____ Date _____
Addendum No. _____ Date _____
Addendum No. _____ Date _____

Addendum No. _____ Date _____
Addendum No. _____ Date _____
Addendum No. _____ Date _____

This bid may be withdrawn in writing at any time prior to the scheduled time for the opening of bids, including any authorized postponement thereof.

A bidder shall not submit this bid form unless the bidder's California contractor's license number appears clearly on it, the license expiration date and class are stated, and the bid form contains a statement that the representations made therein are made under penalty of perjury. Any bid submitted by a contractor who is not licensed pursuant to Business and Professions Code section 7028.15 shall be considered nonresponsive and shall be rejected. Any bid not containing the above information may be considered nonresponsive and may be rejected.

Proof of Bidder's registration per Labor Code §1725.5 must be submitted with this bid form.

NOTE: This bid form must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Corporations must sign with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation in the matter. The name of each person signing shall also be typed or printed below the signature. Satisfactory evidence of the authority of the officers signing on behalf of a corporation shall be furnished with the bid.

The undersigned declares under penalty of perjury under the laws of the State of California that the representations made in this bid are true and correct.

Name of Company as Licensed in California: _____

Business Address: _____

Telephone Number: _____

California Contractor License No.: _____

Class and Expiration Date: _____

Public Works Contractor Registration No.: _____

State of Incorporation, if Applicable: _____

INDIVIDUAL:

_____ (*Name*)

Dated: _____, 20__

PARTNERSHIP:

Evidence of authority to bind partnership is attached.

 _____ (Name)
 General Partner

Dated: _____, 20__

CORPORATION:

Evidence of authority to bind corporation is attached.

_____ (Chairman, Pres., or Vice-Pres.)

Dated: _____, 20__

_____ Dated: _____
 _____ (Name)
 _____ (Secretary, Asst. Secretary, CFO, or Asst. Treasurer)

Dated: _____, 20__

BID BOND

Bond Number: _____

KNOW ALL MEN BY THESE PRESENTS that we the undersigned
_____ as Principal and
_____ as Surety, are hereby held and firmly bound
unto the Chualar Union School District ("Owner") in the sum of
_____ Dollars (\$ _____) for payment of which sum, well
and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors,
administrators, successors and assigns.

The condition of the above obligation is such that whereas the Principal has
submitted to the Owner a certain bid, attached hereto and hereby made a part hereof, to
enter into a Contract in writing for the construction of Buildings A-F Reroofing Project,
Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 in strict
accordance with Contract Documents.

NOW, THEREFORE,

- a. If said bid shall be rejected, or, in the alternative;
- b. If said bid shall be accepted and the Principal shall execute and deliver a
contract in the form of agreement attached hereto and shall execute and deliver
Performance and Payment Bonds in the forms attached hereto (all properly completed in
accordance with said bid), and shall in all other respects perform the agreement created
by the acceptance of said bid;

Then this obligation shall be void, otherwise the same shall remain in full force
and effect, it being expressly understood and agreed that the liability of the Surety for any
and all default of the Principal hereunder shall be the amount of this obligation as herein
stated.

Surety, for value received, hereby stipulates and agrees that no change, extension
of time, alteration or addition to the terms of the Contract on the call for bids, or to the
Work to be performed hereunder, or the specifications accompanying the same, shall in
any way affect its obligation under this bond, and it does hereby waive notice of any such
change, extension of time, alteration or addition to the terms of said Contract or the call
for bids, or to the Work, or to the specifications.

IN WITNESS WHEREOF, the above-bounden parties have executed this
instrument under several seals this ____ day of _____, _____, the name
and corporate party being hereto affixed and these presents duly signed by its

undersigned representative, pursuant to authority of its governing body. In the presence of:

(Notary Seal)

(Principal)

(Business Address)

(Corporate Surety)

Business Address)

By: _____

The rate or premium of this bond is _____ per thousand, the total amount of premium charged, \$_____.

(The above must be filled in by Corporate Surety).

DESIGNATION OF SUBCONTRACTORS

Each bidder shall set forth below the name and the location of the place of business of each subcontractor, and the California contractor license number and (for all projects over Twenty-Five Thousand Dollars (\$25,000)) public works contractor registration number of each subcontractor who will perform work or labor or render service to the Contractor in or about the construction of the Work or improvement, or to a subcontractor licensed by the State of California who, under subcontract to the Contractor, specially fabricates and installs a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent (0.5%) of the bidder's total bid, and the portion of the Work which will be done by each subcontractor. An inadvertent error in listing a California contractor's license number shall not be grounds for filing a bid protest or for considering the bid nonresponsive if the bidder submits the corrected contractor's license number to the Owner within 24 hours after the bid opening, or any continuation thereof, so long as the corrected contractor's license number corresponds to the submitted name and location for that subcontractor.

If the Contractor fails to specify a subcontractor for any portion of the Work to be performed under the Contract in excess of one-half of 1 percent (0.5%) of the Contractor's total bid, the Contractor shall be deemed to have agreed to perform such portion itself, and shall not be permitted to subcontract that portion of the Work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the Work as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the legislative body of the Owner.

For all projects over Twenty-Five Thousand Dollars (\$25,000): For any bid proposal submitted, and for any contract for public work entered into, an inadvertent error in listing a subcontractor who is not registered under Labor Code section 1725.5 shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive, provided that either: the subcontractor is registered prior to the bid opening; or the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5(a)(2)(E), if applicable, within 24 hours after the bid opening; or the subcontractor is replaced by another registered subcontractor under Public Contract Code section 4107. Failure of a listed subcontractor to be registered shall be grounds under Public Contract Code section 4107 for the Contractor, with the Owner's consent, to substitute a registered subcontractor for the unregistered subcontractor.

Failure to provide this information in a legible manner may result in the rejection of an otherwise acceptable bid.

NOTE: *Reproduce page two of this section for additional listings needed beyond the length of this form.*

I am the authorized representative of the Bidder submitting this Designation of Subcontractors and I declare that each subcontractor listed holds a valid and current contractor license in good standing in California to perform the portion of work for which the subcontractor is listed.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, 20____, at _____ [city], _____[state].

Signature: _____

Print Name: _____

Title: _____

NONCOLLUSION DECLARATION

Owner: Chualar Union School District
Contract: Buildings A-F Reroofing Project, Chualar Elementary School, 24285
Lincoln Street, Chualar, CA 93925

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid or proposal ("Bid").

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The bidder or proposer ("Bidder") has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham Bid, or to refrain from bidding or proposing ("Bidding"). The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid price, or of that of any other Bidder. All statements contained in the Bid are true. The Bidder has not, directly or indirectly, submitted his or her Bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, Bid depository, or to any member or agent thereof to effectuate a collusive or sham Bid, and has not paid, and will not pay, any person or entity for such purpose.

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____, 20__, at _____ [city], _____ [state].

Signature

Print Name

SUFFICIENT FUNDS DECLARATION
(Labor Code section 2810)

To Be Executed by Bidder and Submitted with Bid

Owner: Chualar Union School District
Contract: Buildings A-F Reroofing Project, Chualar Elementary School, 24285
Lincoln Street, Chualar, CA 93925

I, _____, declare that I am the _____ *[insert title]* of _____, the entity making and submitting the bid for the above Project that accompanies this Declaration, and that such bid includes sufficient funds to permit _____ *[insert name of entity]* to comply with all local, state or federal labor laws or regulations during the Project, including payment of prevailing wage, and that _____ *[insert name of entity]* will comply with the provisions of Labor Code section 2810(d) if awarded the Contract.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and executed on _____, 20__, at _____ *[city]*, _____ *[state]*.

Date: _____

Signature

Print Name: _____

Print Title: _____

**FINGERPRINTING NOTICE AND ACKNOWLEDGMENT
FOR CONSTRUCTION CONTRACTS**
(Education Code Section 45125.2)

Business entities entering into contracts with the Owner for the construction, reconstruction, rehabilitation or repair of a facility may comply with Education Code section 45125.2, in which case it would not have to comply with Section 45125.1. If such an entity is not compliant with Section 45125.2, then it must comply with Section 45125.1. Such entities are responsible for ensuring full compliance with the law and should therefore review all applicable statutes and regulations. Therefore, the following information is provided simply to assist you with compliance with the law:

1. The Owner has determined that your employee(s), or you as a sole proprietor, will have more than limited contact with students, therefore the law requires that you must use one or more of the following methods to ensure the safety of pupils (Education Code §45125.2(a)):
 - a. Install a physical barrier at the worksite to limit contact with pupils.
 - b. If you are not a sole proprietorship, have one of your employees, whom the Department of Justice has ascertained has not been convicted of a violent or serious felony (see ***Attachment A*** to this Notice and Acknowledgement), continually monitor and supervise all of your employees. For the Department of Justice to so ascertain, your employee may submit fingerprints to the Department of Justice pursuant to Education Code section 45125.1(a).
 - c. Arrange, with Owner's approval, for surveillance of your employees by Owner's personnel.

Prior to commencing the Work, you shall submit the Independent Contractor Student Contact Form (see ***Attachment B*** to this Notice and Acknowledgement) to the Owner, which will indicate which of the above methods you will use.

2. If you are providing services in an emergency or exceptional situation, you are not required to comply with Education Code section 45125.2, above. An "emergency or exceptional" situation is one in which pupil health or safety is endangered or when repairs are needed to make a facility safe and habitable. Owner shall determine whether an emergency or exceptional situation exists. (Education Code §45125.2(d).)
3. If you use one or more of the three methods in Section 1 (above), you are not required to comply with Education Code section 45125.1. (Education Code §45125.2(b).)

I have read the foregoing and agree to comply with the requirements of this notice and Education Code sections 45125.1 and 45125.2 as applicable.

Dated: _____

Signature

Name: _____

Title: _____

ATTACHMENT A

Violent and Serious Felonies

Under Education Code section 45125.2, no employee of a contractor or subcontractor who has been convicted of or has criminal proceedings pending for a violent or serious felony may come into contact with any student. A violent felony is any felony listed in subdivision (c) of Section 667.5 of the Penal Code. Those felonies are presently defined as:

- (1) Murder or voluntary manslaughter.
- (2) Mayhem.
- (3) Rape as defined in paragraph (2) or (6) of subdivision (a) of Section 261 or paragraph (1) or (4) of subdivision (a) of Section 262.
- (4) Sodomy as defined in subdivision (c) or (d) of Section 286.
- (5) Oral copulation as defined in subdivision (c) or (d) of Section 288a.
- (6) Lewd or lascivious act as defined in subdivision (a) or (b) of Section 288.
- (7) Any felony punishable by death or imprisonment in the state prison for life.
- (8) Any felony in which the defendant inflicts great bodily injury on any person other than an accomplice which has been charged and proved as provided for in Section 12022.7, 12022.8, or 12022.9 on or after July 1, 1977, or as specified prior to July 1, 1977, in Sections 213, 264, and 461, or any felony in which the defendant uses a firearm which use has been charged and proved as provided in subdivision (a) of Section 12022.3, or Section 12022.5 or 12022.55.
- (9) Any robbery.
- (10) Arson, in violation of subdivision (a) or (b) of Section 451.
- (11) Sexual penetration as defined in subdivision (a) or (j) of Section 289.
- (12) Attempted murder.
- (13) A violation of Section 18745, 18750, or 18755.
- (14) Kidnapping.

- (15) Assault with the intent to commit a specified felony, in violation of Section 220.
- (16) Continuous sexual abuse of a child, in violation of Section 288.5.
- (17) Carjacking, as defined in subdivision (a) of Section 215.
- (18) Rape, spousal rape, or sexual penetration, in concert, in violation of Section 264.1.
- (19) Extortion, as defined in Section 518, which would constitute a felony violation of Section 186.22 of the Penal Code.
- (20) Threats to victims or witnesses, as defined in Section 136.1, which would constitute a felony violation of Section 186.22 of the Penal Code.
- (21) Any burglary of the first degree, as defined in subdivision (a) of Section 460, wherein it is charged and proved that another person, other than an accomplice, was present in the residence during the commission of the burglary.
- (22) Any violation of Section 12022.53.
- (23) A violation of subdivision (b) or (c) of Section 11418.

A serious felony is any felony listed in subdivision (c) Section 1192.7 of the Penal Code. Those felonies are presently defined as:

- (1) Murder or voluntary manslaughter; (2) Mayhem; (3) Rape; (4) Sodomy by force, violence, duress, menace, threat of great bodily injury, or fear of immediate and unlawful bodily injury on the victim or another person; (5) Oral copulation by force, violence, duress, menace, threat of great bodily injury, or fear of immediate and unlawful bodily injury on the victim or another person; (6) Lewd or lascivious act on a child under the age of 14 years; (7) Any felony punishable by death or imprisonment in the state prison for life; (8) Any felony in which the defendant personally inflicts great bodily injury on any person, other than an accomplice, or any felony in which the defendant personally uses a firearm; (9) Attempted murder; (10) Assault with intent to commit rape, or robbery; (11) Assault with a deadly weapon or instrument on a peace officer; (12) Assault by a life prisoner on a non-inmate; (13) Assault with a deadly weapon by an inmate; (14) Arson; (15) Exploding a destructive device or any explosive with intent to injure; (16) Exploding a destructive device or any explosive causing bodily injury, great bodily injury, or mayhem; (17) Exploding a destructive device or any explosive with intent to murder; (18) Any burglary of the first degree; (19) Robbery or bank robbery; (20) Kidnapping; (21) Holding of a hostage by a person confined in a state prison; (22) Attempt to commit a felony punishable by death or imprisonment in the state prison for life; (23) Any felony in which the defendant

personally used a dangerous or deadly weapon; (24) Selling, furnishing, administering, giving, or offering to sell, furnish, administer, or give to a minor any heroin, cocaine, phencyclidine (PCP), or any methamphetamine-related drug, as described in paragraph (2) of subdivision (d) of Section 11055 of the Health and Safety Code, or any of the precursors of methamphetamines, as described in subparagraph (A) of paragraph (1) of subdivision (f) of Section 11055 or subdivision (a) of Section 11100 of the Health and Safety Code; (25) Any violation of subdivision (a) of Section 289 where the act is accomplished against the victim's will by force, violence, duress, menace, or fear of immediate and unlawful bodily injury on the victim or another person; (26) Grand theft involving a firearm; (27) carjacking; (28) any felony offense, which would also constitute a felony violation of Section 186.22; (29) assault with the intent to commit mayhem, rape, sodomy, or oral copulation, in violation of Section 220; (30) throwing acid or flammable substances, in violation of Section 244; (31) assault with a deadly weapon, firearm, machine gun, assault weapon, or semiautomatic firearm or assault on a peace officer or firefighter, in violation of Section 245; (32) assault with a deadly weapon against a public transit employee, custodial officer, or school employee, in violation of Sections 245.2, 245.3, or 245.5; (33) discharge of a firearm at an inhabited dwelling, vehicle, or aircraft, in violation of Section 246; (34) commission of rape or sexual penetration in concert with another person, in violation of Section 264.1; (35) continuous sexual abuse of a child, in violation of Section 288.5; (36) shooting from a vehicle, in violation of subdivision (c) or (d) of Section 26100; (37) intimidation of victims or witnesses, in violation of Section 136.1; (38) criminal threats, in violation of Section 422; (39) any attempt to commit a crime listed in this subdivision other than an assault; (40) any violation of Section 12022.53; (41) a violation of subdivision (b) or (c) of Section 11418; and (42) any conspiracy to commit an offense described in this subdivision.

ATTACHMENT B

STUDENT CONTACT FORM FOR CONSTRUCTION CONTRACTS

Note: This form must be submitted by Contractor before it may commence any work.

Contractor Firm Name: _____
Supervisor/Foreman Name: _____
Start Date: _____
Completion Date: _____
Location of Work: _____
Hours of Work: _____
Length of Time on Grounds: _____
Number of Employees on the Job: _____

I am an owner or officer of Contractor authorized to sign this document on behalf of Contractor. Contractor acknowledges that the Owner has determined that Contractor's employees, or that Contractor as a sole proprietor, will have more than limited contact with students. Therefore, in order to comply with Education Code section 45125.2, Contractor will use the following methods to ensure student safety (check at least one):

- ☐ A physical barrier will be installed at the worksite to limit contact with pupils.
- ☐ Contractor is not a sole proprietorship, and its employees will be continually monitored and supervised by one of its employees who has not been convicted of a violent or serious felony.

Name of Supervising Employee:

Date of Department of Justice verification that supervising employee has not been convicted of a violent or serious felony:

Name of employee who is the custodian of the Department of Justice verification information:

- ☐ The Owner has agreed that Contractor's employees, or Contractor as sole proprietor, will be surveilled by Owner's personnel.

If Contractor does not comply with the requirements of Education Code section 45125.2, then Contractor will comply with the requirements of Education Code section 45125.1.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Dated: _____

Signature: _____

Typed Name: _____

Title: _____

Contractor: _____

WORKERS' COMPENSATION CERTIFICATE

Labor Code Section 3700, in relevant part, provides:

"Every employer except the state shall secure the payment of compensation in one or more of the following ways:

(a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this state.

(b) By securing from the Director of Industrial Relations a certificate of consent to self-insure either as an individual employer or as one employer in a group of employers. Said certificate may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his or her employees, ... "

I am aware of the provisions of the Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract. I shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Name of Contractor

Signature

Print Name

Date

(In accordance with Article 5 (commencing at Section 1860), Chapter 1, Part 7, Division 2 of the Labor Code, the above certificate must be signed and filed with the awarding body prior to performing any work under the contract.)

**PRIME BIDDER CERTIFICATION OF DISABLED VETERAN
BUSINESS ENTERPRISE PARTICIPATION**

To be completed by the Prime Bidder

PAGE 1 OF 2

PART I – IDENTIFICATION INFORMATION		
BIDDER'S NAME	BUSINESS ADDRESS	TELEPHONE NUMBER
SCHOOL DISTRICT	COUNTY	APPLICATION NO.
PART II – METHOD OF COMPLIANCE WITH DVBE PARTICIPATION GOALS – Include this form and any other applicable documents listed in this table with your bid/proposal. Read the three columns in the table below as sentences from left to right. Check the appropriate box to indicate your method of committing the contract dollar amount. NOTE: <i>Architectural, engineering, environmental, land surveying or construction management firms must indicate their method of compliance by marking the appropriate box A, B, C, or D after selection by the District and before the contract is signed.</i>		
YOUR BUSINESS ENTERPRISE	AND YOU	AND YOU
A. ☐ <i>is Disabled Veteran owned and your forces, will perform at least 3 percent of this contract</i>	<i>will include a copy of your DVBE letter from the Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS).</i>	
B. ☐ <i>is Disabled Veteran owned but is unable to perform the 3 percent of this contract with your forces</i>	<i>will use DVBE subcontractors/ suppliers to bring the contract participation to at least 3 percent</i>	<i>will include a copy of each DVBE's letter from OSDS (including yours, if applicable).</i>
C. ☐ <i>is not Disabled Veteran owned</i>	<i>will use DVBE subcontractors/ suppliers for at least 3 percent of this contract</i>	
D. ☐ <i>is unable to meet the required participation goals</i>	<i>will complete a Good Faith Effort to obtain DVBE participation</i>	<i>will include the Prime Bidder's Good Faith Effort Worksheet.</i>

Note: An Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS) letter must be attached for each DVBE participating in the contract. The DVBE letter is obtained by application through the OSDS and must be provided at the time of bid opening. If the letter is not provided, the bid may be deemed nonresponsive and may be ineligible for award of the contract.

Continued on reverse side

PART III – DVBE DOLLAR PARTICIPATION OF BID/PROPOSAL – *Architectural, engineering, environmental, land surveying or construction management firms complete this part **after** selection by the district and before the contract is signed.*

Show deductive alternate(s) in parenthesis. For more alternates/base bids, use a separate page to show items.

- A. If your business enterprise is a DVBE, list in the appropriate column the total dollar amount of your bid to be performed by your own participation.
- B. List all your DVBE subcontractors/suppliers. Enter in the appropriate column the dollar amount for each of your subcontractors/suppliers.
- C. Enter the total of Lines A and B for each column.
- D. Enter the dollar amount of the bid/proposal to be performed by **non-DVBE** firms. Note: This line is the sum of the prime and subcontractor(s) **non-DVBE** dollar participation.
- E. Enter the sum of the column totals from Line C and Line D. Note: Please be aware that the final determination of DVBE compliance is made based on the contract amount resulting from the district's acceptance or rejection of alternates.

	BASE BID/PROPOSAL	ALTERNATE #1	ALTERNATE #2	ALTERNATE #3 OR BASE BID B	ALTERNATE #4 OR BASE BID C	ALTERNATE #5 (Modernization or Reconstruction Only)
A. Prime Bidder, <i>if DVBE (own participation)</i>	\$	\$	\$	\$	\$	\$
B. DVBE Subcontractor or Supplier						
1.						
2.						
3.						
4.						
C. Subtotal (A & B)						
D. Non-DVBE						
E. Total Bid						

PRIME BIDDER GOOD FAITH EFFORT WORKSHEET

This worksheet is to be used to assist the Prime Bidder in meeting the 3% DVBE participation goal

PAGE 1 OF 2

BIDDER'S NAME	BUSINESS ADDRESS	CONTACT PERSON
TELEPHONE NUMBER	OWNER	COUNTY

GENERAL INSTRUCTIONS:

This worksheet is to be used to assist you in meeting the 3 percent DVBE participation goal. If specific information is not provided for Parts I through III, you do not meet the test of the "Good Faith Effort" and cannot so certify. If you are qualifying based on a "Good Faith Effort" you must include this form with your bid/proposal to the Owner.

PART I – CONTACTS

To identify DVBE subcontractors/suppliers for participation in your bid/proposal, contact must be made with each of the following categories. It is recommended that you contact several DVBE organizations.

CATEGORY	TELEPHONE NUMBER	DATE CONTACTED	PERSON CONTACTED
1. Owner			
2. Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS). OSDS provides assistance locating DVBE's at https://caleprocure.ca.gov/pages/PublicSearch/suppliersearch.aspx	(916) 375-4940		
3. DVBE Organizations (<i>List</i>):			
4. Write "recorded message" in this column, if applicable.			

PART II – ADVERTISEMENTS You must make at least two (2) advertisements, one (1) in a paper that focuses on DVBE and one (1) in a trade paper. Advertisements should be published at least 14 days prior to bid/proposal opening; if you cannot advertise 14 days prior, advertise as soon as possible and provide an explanation. (Advertisements must be published in time to allow for a reasonable response). Advertisements must include that your firm is seeking DVBE participation, the project name and location, your firm's name, your firm's contact person, and phone number.

Attach copies of advertisements to this form.

FOCUS/TRADE PAPER NAME	CHECK ONE		DATE OF ADVERTISEMENT
	TRADE	FOCUS	

PART III – DVBE SOLICITATIONS List DVBE subcontractors/suppliers that were invited to bid. Use the following instructions to complete the remainder of this section (read the three columns as a sentence from left to right). If you need additional space to list DVBE solicitations, please use a separate page and attach to this form.

IF THE DVBE.....	THEN.....	AND.....
Was selected to participate	Check "yes" in the "SELECTED" column, include the applicable dollar amount in Part III of the Prime Bidder Certification	Include a copy of their DVBE letter from OSDS.
Was not selected to participate	Check "no" in the "SELECTED" column	State why in the "REASON NOT SELECTED" column.
Did not respond to your solicitation	Check the "NO RESPONSE" column	

DISABLED VETERANS BUSINESS ENTERPRISES CONTACTED	SELECTED		REASON NOT SELECTED <i>This section must be completed</i>	NO RESPONSE
	YES	NO		

IMPORTANT NOTE:

Please be aware that certification of the "Good Faith Effort" may only be made if you fully complete Parts I, II, and III on both sides of this form. A copy of this form must be retained by you and may be subject to a future audit.

CERTIFICATION

I, _____ certify that I am the bidder's Chief Executive Officer and that I have made a diligent effort to ascertain the facts with regard to the representations made herein. In making this certification, I am aware of Section 12650 et seq. of the Government Code providing for the imposition of treble damages for making false claims.

SIGNATURE OF CHIEF EXECUTIVE OFFICER	DATE
--------------------------------------	------

DRUG-FREE WORKPLACE CERTIFICATION

The Drug-Free Workplace Act of 1990 (Government Code sections 8350 *et seq.*) requires that every person or organization awarded a contract or grant for the procurement of any property or services from any State agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract awarded by a State agency may be subject to suspension of payments or termination of the contract, or both, and the contractor may be subject to debarment from future contracting if the state agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract or grant from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition;
- (b) Establishing a drug-free awareness program to inform employees about all of the following:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The person's or organization's policy of maintaining a drug-free workplace;
 - (3) The availability of drug counseling, rehabilitation and employee-assistance programs;
 - (4) The penalties that may be imposed upon employees for drug abuse Violations;
- (c) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code Section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by Section 8355(a) and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the Owner determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355, that the contract or grant awarded herein is subject to suspension of payments, termination, or both. I further understand that should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350 *et seq.*

I acknowledge that I am aware of the provisions of Government Code Section 8350 *et seq.* and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

Name of Contractor

Signature

Print Name

Date

ROOF PROJECT CERTIFICATION

(Public Contract Code §3006(a) and (b))

Owner: Chualar Union School District

Contract: Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 Contract

I, _____ [name], _____ [name of employer], certify that I have not offered, given, or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with the roof project contract. As used in this certification, "person" means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals. Furthermore, I, _____ [name], _____ [name of employer], certify that I do not have, and throughout the duration of the contract, I will not have, any financial relationship in connection with the performance of this contract with any architect, engineer, roofing, consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

I, _____ [name], _____ [name of employer], have the following financial relationships, with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

[name and address of building, contract date and number]

[name and address of building, contract date and number]

[name and address of building, contract date and number]

[name and address of building, contract date and number]

I certify that to the best of my knowledge, the contents of this disclosure are true, or are believed to be true.

_____ Signature _____ Date

_____ Print Name

_____ Print Name of Employer

PERFORMANCE BOND

Bond Number: _____

KNOW ALL MEN BY THESE PRESENTS that we, _____,
as Principal, and _____, as Surety, are held and firmly bound
unto the Chualar Union School District, in the County of Monterey, State of California,
hereinafter called the "Owner," in the sum of _____
Dollars (\$_____) for the payment of which sum well and truly made, we bind
ourselves, our heirs, executors, administrators, and successors, jointly and severally, to
the Owner for the full performance of a certain contract with the Owner, the terms of
which are incorporated herein by reference, dated _____, 20____, for
construction of

**the Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street,
Chualar, CA 93925 (the "Contract").**

The condition of this obligation is such that, if the Principal shall well and truly
perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of
said Contract during the original term of said Contract and any extensions thereof that
may be granted by the Owner, with or without notice to the Surety, during the period of
time specified in the Contract after completion for correction of faulty or improper
materials and workmanship, and during the life of any guaranty or warranty required
under the Contract, and also shall well and truly perform and fulfill all the undertakings,
covenants, terms, conditions and agreement of any and all duly authorized modifications
of said Contract that may hereafter be made, then this obligation is to be void, otherwise
to remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees that no
change, extension of time, alteration or addition to the terms of the Contract or to the
Work to be performed thereunder or the specifications accompanying the same, shall in
any way affect its obligation on this bond, and it does hereby waive notice of any such
change, extension of time, alteration or addition to the terms of the Contract, or to the
Work, or to the specifications.

No further agreement between Surety and Owner shall be required as a
prerequisite to the Surety performing its obligations under this bond. In the event that the
Surety elects to complete the Work of the Contract after termination of the Contract by
Owner, the Surety may not hire Principal, or any of Principal's owners, employees, or
subcontractors, to perform the Work without the written consent of Owner, and the
Owner may grant or withhold such consent within its sole discretion.

IN WITNESS WHEREOF, the above-bounden parties have executed this
instrument under their several seals this _____ day of _____, 20____,

hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(To be signed by)
(Principal and Surety,)
(and acknowledged and)
(Notarial Seal attached)

(Affix Corporate Seal)

(Individual Principal)

(Business Address)

(Affix Corporate Seal)

(Corporate Principal)

(Business Address)

(Affix Corporate Seal)

(Corporate Surety)

(Business Address)

By: _____

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

The total amount of premium charged is _____.

The above must be filled in by Corporate Surety.

PAYMENT BOND
(Labor and Material)

Bond Number: _____

KNOW ALL MEN BY THESE PRESENTS:

That WHEREAS, the Chualar Union School District (the "Owner" of the public works contract described below) and _____, hereinafter designated as the "Principal," have entered into a Contract for the furnishing of all materials and labor, services and transportation, necessary, convenient, and proper to construct the Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 Contract, which consists of Reroofing, gutters, downspouts and associated work.

which said agreement dated _____, 20__, and all of the Contract Documents are hereby referred to and made a part hereof;

and

WHEREAS, the Principal is required, before entering upon the performance of the work, to file a good and sufficient bond with the body by whom the Contract is awarded to secure the claims arising under said agreement.

NOW, THEREFORE, THESE PRESENTS WITNESSETH:

That the said Principal and the undersigned _____ ("Surety") are held and firmly bound unto all laborers, material men, and other persons, and bound for all amounts due, referred to in Civil Code section 9554, subdivision (b), in the sum of _____ Dollars (\$_____) which sum well and truly be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, by these presents.

The condition of this obligation is that if the said Principal or any of its subcontractors, or the heirs, executors, administrators, successors, or assigns of any, all, or either of them, shall fail to pay any of the persons named in Civil Code section 9100, or any of the amounts due, as specified in Civil Code section 9554, subdivision (b), that said Surety will pay the same in an amount not exceeding the amount hereinabove set forth, and also in case suit is brought upon this bond, will pay costs and reasonable attorney's fees to be awarded and fixed by the Court, and to be taxed as costs and to be included in the judgment therein rendered.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void, otherwise it shall be and remain in full force and effect.

And the said Surety, for value received, thereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of said contract or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension, alteration, or addition.

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety this _____ day of _____, 20__.

(To be signed by _____)
(Principal and Surety, _____)
(and acknowledged and _____)
(Notarial Seal attached _____)

Principal

Surety

By: _____
Attorney-in-Fact

The above bond is accepted and approved this _____ day of _____.

AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Agreement, effective _____, 20__, is by and between the Chualar Union School District, in Monterey County, California, hereinafter called the “Owner,” and _____ hereinafter called the “Contractor.”

WITNESSETH: That the Contractor and the Owner for the consideration hereinafter named agree as follows:

ARTICLE I. SCOPE OF WORK.

The Contractor agrees to furnish all labor, equipment and materials, including tools, implements, and appliances required, and to perform all the work required, by the Contract (the “Work”) in a good and workmanlike manner, free from any and all liens and claims from mechanics, material suppliers, subcontractors, artisans, machinists, teamsters, freight carriers, and laborers, and as specified in

the Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street,
Chualar, CA 93925,

all in strict compliance with the plans, drawings and specifications therefore prepared by

Peartree+Belli Architects, Inc., 235 Monterey Street, Suite B, Salinas, CA 93901,
831-424-4620,

and other Contract Documents relating thereto.

The Contract as awarded includes the base scope of work plus Alternate Bid Item Nos. _1_, listed in the Bid Form ”

During the Work, the Contractor shall ensure that all Work, including but not limited to Work performed by Subcontractors, is performed in compliance with all applicable legal, contractual, and local government requirements related to COVID-19 and other public health emergencies, including “social distancing,” masks, and hygiene as may be ordered by the State or local authorities and as may be directed in the Contract Documents.

ARTICLE II. CONTRACT DOCUMENTS.

The Contractor and the Owner agree that all of the documents listed in Article 1.1.1 of the General Conditions are incorporated into this Agreement and form the “Contract Documents” which form the “Contract.”

ARTICLE III. TIME TO COMPLETE AND LIQUIDATED DAMAGES.

Time is of the essence in this Contract, and the time of Completion for the Work (“the Contract Time”) shall be one hundred eighty days (180) calendar days which shall start to run on (a) the date of commencement of the Work as established in the Owner’s Notice to Proceed, or (b) if no date of commencement is established in a Notice to Proceed from Owner, the date of Contractor’s actual commencement of the Work (including mobilization).

The site for the Contract will not be available to the Contractor for construction on the following dates: (none). The Contractor shall not be entitled to time extensions for lack of access to the site on these dates.

Failure to Complete the Work within the Contract Time and in the manner provided for by the Contract Documents, or failure to complete any specified portion of the Work by a milestone deadline, shall subject the Contractor to liquidated damages. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if the Work were not Completed within the Contract Time, or if any specified portion of the Work were not completed by a milestone deadline, are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of such delay include, but are not limited to, loss of the use of the Work, disruption of activities, costs of administration and supervision, third party claims, and the incalculable inconvenience and loss suffered by the public.

Accordingly, the parties agree that \$500 per calendar day of delay shall be the damages which the Owner shall directly incur upon failure of the Contractor to Complete the Work within the Contract Time or Complete any specified portion of the Work by a milestone deadline, as described above.

Liquidated damages will accrue for failure to meet milestone deadlines even if the Contractor Completes the Work within the Contract Time.

In addition, Contractor shall be subject to liquidated damages, or actual damages if liquidated damages are not recoverable under law, for causing another contractor on the Project to fail to timely complete its work under its contract or for causing delayed *completion* of the Project. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if another contractor on the Project were to fail to timely complete its work under its contract or delay *completion* of the Project are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of such delay include, but

are not limited to, loss of the use of the Work, loss of use of the other contractor's work, loss of use of the Project, disruption of activities, costs of administration and supervision, third party claims, the incalculable inconvenience and loss suffered by the public, and an Owner's inability to recover its delay damages from the contractors whose work was delayed by Contractor.

Accordingly, the parties agree that \$ 500 for each calendar day of delay shall be the amount of damages which the Owner shall directly incur upon Contractor causing another contractor on the Project to fail to timely complete its work under its contract or causing delayed *completion* of the Project.

For Contractor's obligations regarding claims against Owner from other contractors on the Project alleging that Contractor caused delays to their work, see General Conditions sections 3.7.4, 3.16 and 6.2.3.

If liquidated damages accrue as described above, the Owner, in addition to all other remedies provided by law, shall have the right to assess the liquidated damages at any time, and to withhold liquidated damages (and any interest thereon) at any time from any and all retention or progress payments, which would otherwise be or become due the Contractor. In addition, if it is reasonably apparent to the Owner before liquidated damages begin to accrue that they will accrue, Owner may assess and withhold, from retention or progress payments, the estimated amount of liquidated damages that will accrue in the future. If the retained percentage or withheld progress payments are not sufficient to discharge all liabilities of the Contractor incurred under this Article, the Contractor and its sureties shall continue to remain liable to the Owner until all such liabilities are satisfied in full.

If Owner accepts any work or makes any payment under the Contract Documents after a default by reason of delays, the payment or payments shall in no respect constitute a waiver or modification of any provision in the Contract Documents regarding time of Completion, milestone deadlines, or liquidated damages.

ARTICLE IV. PAYMENT AND RETENTION.

The Owner agrees to pay the Contractor in current funds Dollars (\$) for work satisfactorily performed after receipt of properly documented and submitted Applications for Payment and to make payments on account thereof, as provided in the General Conditions.

The above contract price does not include any special allowances The above contract price includes a general contingency allowance of \$25,000 to pay any additional amounts to which the Contractor may be entitled under the Contract Documents other than special allowances.

Any payment from a special allowance or general contingency allowance

("Allowance") is entirely at the discretion, and only with the advanced written approval, of the Owner. To request payment from an Allowance, the Contractor must fully comply with the Contract Documents' requirements related to Notice to Potential Changes, Change Order Requests, and Claims, including but not limited to Articles 4 and 7 of the General Conditions and its provisions regarding waiver of rights for failure to comply. If the Owner approves in writing a payment from an Allowance, no change order approved by Owner's governing body shall be required, but Contractor must sign an Allowance expenditure form, after which the Contractor may include a request for such payment in its next progress payment application. Contractor's inclusion of a request for such payment in a progress payment application, or Contractor's acceptance of a progress payment that includes such payment, shall act as a full and complete waiver by Contractor of all rights to recover additional money related to the underlying basis of such payment; and such waiver shall be in addition to any other waiver that applies under the Contract Documents (including Article 4 of the General Conditions). If Contractor requests a time extension or other consideration in connection with or related to a requested payment from an Allowance, Contractor must comply with the Contract Documents' requirements related to Notice to Potential Changes, Change Order Requests, and Claims, including but not limited to Articles 4, 7, and 8 of the General Conditions and their provisions regarding waiver of rights for failure to comply, and no such time extension or other consideration may be issued until a change order is approved by the Owner's governing body pursuant to the Contract Documents. The amount of an Allowance may only be increased by a change order approved by Owner's governing body. Once an Allowance is fully spent, the Contractor must request any additional compensation pursuant to the procedures in the Contract Documents for Notices of Potential Claim, Change Order Requests, and Claims, and payment must be made by a change order approved by the Owner's governing body pursuant to the General Conditions. Upon Completion of the Work, all amounts in an Allowance that remain unspent and unencumbered shall remain the property of the Owner, Contractor shall have no claim to such funds, the Owner shall be entitled to a credit for such unused amounts against the above contract price, and the Owner may withhold such credit from any progress payment or release of retention.

The Owner has made a finding that this Project is substantially complex and requires a retention amount greater than 5%. (Public Contract Code section 7201.) The retention amount on this Project is ten percent (10%).

For any cost reduction changes in the plans and specifications that the Owner makes pursuant to an unsolicited proposal submitted by Contractor, the Contractor shall receive additional payment of 50 percent of the net savings in construction costs as determined by the public entity, pursuant to Public Contract Code section 7101. Owner is not obligated to accept any proposal submitted by Contractor.

ARTICLE V. CHANGES.

Changes in this Agreement or in the Work to be done under this Agreement shall be made as provided in the General Conditions.

ARTICLE VI. TERMINATION.

The Owner or Contractor may terminate the Contract as provided in the General Conditions.

ARTICLE VII. PREVAILING WAGES.

The Project is a public work, the Work shall be performed as a public work and pursuant to the provisions of Section 1770 et seq. of the Labor Code of the State of California, which are hereby incorporated by reference and made a part hereof, the Director of Industrial Relations has determined the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification or type of worker needed to execute this Contract. Per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, apprenticeship or other training programs, and similar purposes. Copies of the rates are on file at the Owner's principal office, or are available at <https://www.dir.ca.gov/oprl/dprevwagedetermination.htm>. The rate of prevailing wage for any craft, classification, or type of workmanship to be employed on this Project is the rate established by the applicable collective bargaining agreement which rate so provided is hereby adopted by reference and shall be effective for the life of this Agreement or until the Director of the Department of Industrial Relations determines that another rate be adopted. It shall be mandatory upon the Contractor and on any subcontractor to pay not less than the said specified rates to all workers employed in the execution of this Agreement.

The Contractor and any subcontractor under the Contractor as a penalty to the Owner shall forfeit not more than Two Hundred Dollars (\$200.00) for each calendar day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed. The difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

The Contractor and each Subcontractor shall keep or cause to be kept an accurate record for Work on this Contract and Project showing the names, addresses, social security numbers, work classification, straight time and overtime hours worked and occupations of all laborers, workers and mechanics employed by them in connection with the performance of this Contract or any subcontract thereunder, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by the Owner, its officers and agents and to the representatives of the Division of Labor Standards Enforcement of the State Department of Industrial Relations. The Contractor and each subcontractor shall furnish a certified copy of all payroll records directly to the Labor Commissioner monthly.

Public works projects shall be subject to compliance monitoring and enforcement

by the Department of Industrial Relations. For all projects over Twenty-Five Thousand Dollars (\$25,000), a contractor or subcontractor shall not be qualified to submit a bid or to be listed in a bid proposal subject to the requirements of Public Contract Code section 4104 unless currently registered and qualified under Labor Code section 1725.5 to perform public work as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code. For all projects over Twenty-Five Thousand Dollars (\$25,000), a contractor or subcontractor shall not be qualified to enter into, or engage in the performance of, any contract of public work (as defined by Division 2, Part 7, Chapter 1 (§§1720 et seq.) of the Labor Code) unless currently registered and qualified under Labor Code section 1725.5 to perform public work.

ARTICLE VIII. WORKING HOURS.

In accordance with the provisions of Sections 1810 to 1815, inclusive, of the Labor Code of the State of California, which are hereby incorporated and made a part hereof, the time of service of any worker employed by the Contractor or a Subcontractor doing or contracting to do any part of the Work contemplated by this Agreement is limited and restricted to eight hours during any one calendar day and forty hours during any one calendar week, provided, that work may be performed by such employee in excess of said eight hours per day or forty hours per week provided that compensation for all hours worked in excess of eight hours per day, and forty hours per week, is paid at a rate not less than one and one-half (1½) times the basic rate of pay. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by them in connection with the Work. The records shall be kept open at all reasonable hours to inspection by representatives of the Owner and the Division of Labor Law Enforcement. The Contractor shall as a penalty to the Owner forfeit Twenty-five Dollars (\$25.00) for each worker employed in the execution of this Agreement by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight hours in any one calendar day, and forty hours in any one calendar week, except as herein provided.

ARTICLE IX. APPRENTICES.

The Contractor agrees to comply with Chapter 1, Part 7, Division 2, Sections 1777.5 and 1777.6 of the California Labor Code, which are hereby incorporated and made a part hereof. These sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice's work for each five hours of work performed by a journeyman (unless an exemption is granted in accordance with Section 1777.5) and that contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public works solely on the ground of sex, race, religious creed, national origin, ancestry or color. Only apprentices as defined in Labor Code Section 3077, who are in training under apprenticeship standards and who have signed written apprentice agreements, will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the Contractor for

all apprenticeable occupations.

ARTICLE X. DSA OVERSIGHT PROCESS.

The Contractor must comply with the applicable requirements of the Division of State Architect (“DSA”) Construction Oversight Process (“DSA Oversight Process”), including but not limited to (a) notifying the Owner’s Inspector of Record/Project Inspector (“IOR”) upon commencement and completion of each aspect of the Work as required under DSA Form 156; (b) coordinating the Work with the IOR’s inspection duties and requirements; (c) submitting verified reports under DSA Form 6-C; and (d) coordinating with the Owner, Owner’s Architect, any Construction Manager, any laboratories, and the IOR to meet the DSA Oversight Process requirements without delay or added costs to the Work or Project.

Contractor shall be responsible for any additional DSA fees related to review of proposed changes to the DSA-approved construction documents, to the extent the proposed changes were caused by Contractor’s wrongful act or omissions. If inspected Work is found to be in non-compliance with the DSA-approved construction documents or the DSA-approved testing and inspection program, then it must be removed and corrected. Any construction that covers unapproved or uninspected Work is subject to removal and correction, at Contractor’s expense, in order to permit inspection and approval of the covered work in accordance with the DSA Oversight Process.

ARTICLE XI. INDEMNIFICATION AND INSURANCE.

The Contractor will defend, indemnify and hold harmless the Owner, its governing board, officers, agents, trustees, employees and others as provided in the General Conditions.

By this statement the Contractor represents that it has secured the payment of Workers' Compensation in compliance with the provisions of the Labor Code of the State of California and during the performance of the work contemplated herein will continue so to comply with said provisions of said Code. The Contractor shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Contractor shall provide the insurance set forth in the General Conditions throughout performance of the Contract. Contractor’s comprehensive general and automobile liability insurance shall be written for not less than the following limits of liability:

Comprehensive General Liability

Commercial General Liability	Includes: Bodily Injury, Property Damage, Personal & Advertising Injury,	\$2,000,000 each occurrence; \$4,000,000 general aggregate
------------------------------	--	--

	Product Liability and Completed Operations	
Automobile Liability – <u>Any</u> Auto	Combined Single Limit	\$2,000,000 per occurrence
Workers Compensation		Statutory limits pursuant to State law
Employers' Liability		\$2,000,000 each accident, each disease; \$2,000,000 policy limit
Contractors Pollution Liability Coverage		\$1,000,000 per occurrence; \$5,000,000 aggregate
Excess Liability (Umbrella)		\$2,000,000 per occurrence; \$4,000,000 aggregate
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Property of Others	Combined Single Limit General Aggregate	Issued for the value and scope of Work stored off-site.
Aircraft Liability		\$1,000,000 if drone/aircraft used

Workers' Compensation

Worker's compensation insurance as required by Labor Code section 3200, *et seq.*

ARTICLE XII. ENTIRE AGREEMENT.

The Contract constitutes the entire agreement between the parties relating to the Work, and supersedes any prior or contemporaneous agreement between the parties, oral or written, including the Owner's award of the Contract to Contractor, unless such agreement is expressly incorporated herein. The Owner makes no representations or warranties, express or implied, not specified in the Contract. The Contract is intended as the complete and exclusive statement of the parties' agreement pursuant to Code of Civil Procedure section 1856.

ARTICLE XIII. EXECUTION OF OTHER DOCUMENTS.

The parties to this Agreement shall cooperate fully in the execution of any and all other documents and in the completion of any additional actions that may be necessary or appropriate to give full force and effect to the terms and intent of the Contract.

ARTICLE XIV. EXECUTION IN COUNTERPARTS.

This Agreement may be executed in counterparts such that the signatures may appear on separate signature pages. A copy, or an original, with all signatures appended together, shall be deemed a fully executed Agreement.

ARTICLE XV. BINDING EFFECT.

Contractor, by execution of this Agreement, acknowledges that Contractor has read this Agreement and the other Contract Documents, understands them, and agrees to be bound by their terms and conditions. The Contract shall inure to the benefit of and shall be binding upon the Contractor and the Owner and their respective successors and assigns.

ARTICLE XVI. SEVERABILITY; GOVERNING LAW; CHOICE OF FORUM.

If any provision of the Contract shall be held invalid or unenforceable by a court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof. The Contract shall be governed by the laws of the State of California. Any action or proceeding seeking any relief under or with respect to this Agreement shall be brought solely in the Superior Court of the State of California for the County of Monterey, subject to transfer of venue under applicable State law, provided that nothing in this Agreement shall constitute a waiver of immunity to suit by Owner.

ARTICLE XVII. AMENDMENTS.

The terms of the Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever except by written agreement, including a change order, signed by the parties and approved or ratified by the Governing Board.

ARTICLE XVIII. ASSIGNMENT OF CONTRACT.

The Contractor shall not assign or transfer by operation of law or otherwise any or all of its rights, burdens, duties or obligations without the prior written consent of the surety on the payment bond, the surety on the performance bond and the Owner.

ARTICLE XIX. WRITTEN NOTICE.

Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified or overnight mail to the last business address known to the person who gives the notice.

ARTICLE XX. SANCTIONS IN RESPONSE TO RUSSIAN

AGGRESSION.

The Owner is using State of California funds for this Contract, and therefore Contractor must comply with the Governor's March 4, 2022, Executive Order N-6-22 ("Order") relating to any existing sanctions imposed by the United States government and the State of California in response to Russia's actions in Ukraine, including additional reporting requirements for contracts of \$5 million or more. Failure to comply may result in the termination of the Contract.

_____(CONTRACTOR) **CHUALAR UNION SCHOOL DISTRICT**

_____(Name) _____(Name)

_____(Chairman, Pres., or Vice-Pres.) _____(Title)

_____(Name) _____(Secretary, Asst. Secretary, CFO, or Asst. Treasurer)

CALIFORNIA CONTRACTOR'S
LICENSE NO.

LICENSE EXPIRATION DATE

NOTE: Contractor must give the full business address of the Contractor and sign with Contractor's usual signature. Partnerships must furnish the full name of all partners and the Agreement must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Corporations must sign with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation in the matter. The name of each person signing shall also be typed or printed below the

signature. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be furnished.

APPLICATION AND CERTIFICATE FOR PAYMENT

P.O. # _____ Application # _____

CONTRACT: _____

OWNER

Chualar Union School District _____
_____ Avenue
_____, CA 9 _____

CONTRACTOR

_____, CA 9 _____

Architect's Project No. _____ Date: _____, 201__

Contract Date: _____, 201__ Bid/Contract No. _____

(Provide 5 copies of all materials)

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contractor Documents, that all amounts have been paid by the Contractor for Work which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on an on-site observation and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, Information and belief that the work has progressed as indicated, the quality of the Work is in accordance with the Contracted Document, and the Contractor is entitled to payment of the

AMOUNT CERTIFIED \$ _____

(Attach explanation if amount certified differs from the amount applied for.)

ARCHITECT/ENGINEER/CONSULTANT: _____

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

STATE INSPECTOR'S APPROVAL: _____

1. Original Contract Price (amount of original bid) \$ _____
2. Board-Approved Change Orders (Line 2a+2b from Page 2) \$ _____
3. Revised Contract Price (Line 1 + Line 2) \$ _____
4. Total Completed To Date (see total of Column G on Page 3) \$ _____
5. Retainage (___% of Line 4) \$ _____
6. Total Earned Less Retainage (Line 4 less Line 5) \$ _____
7. Previous Progress Payments \$ _____
8. Current Payment Due (Line 6 less Line 7) \$ _____
9. Balance to Finish, Including Retention (Line 3 less Line 6) \$ _____

FACILITIES PLANNING AUTHORIZATION:

AMOUNT TO PAY (District use only) \$ _____

CONTINUATION SHEET

Contract Name: _____
 Bid/Contract Number: _____
 District Purchase Order Number: _____
 Contract Date: _____

Application Number: _____
 Application Date: _____
 Period To: _____
 Architect's Project Number: _____

A	B	C	D	E	F	G		H	I
ITEM NUMBER	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D+E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	PERCENT (G+C)	BALANCE TO FINISH (C-G)	RETAINAGE
	TOTALS								

* Place % completed and stored to date on payment sheet

STOP PAYMENT NOTICES

[illegible]

TOTALS TO DATE \$_____ \$_____

PREVIOUS MONTHS TOTALS \$_____

CURRENT TOTALS \$ _____ \$ _____

* \$5,000 OR 125%, whichever is greater \$_____

PAYMENT WITHHELD WORKSHEET

Date: _____, 201__

Application # _____

1. Past due payments to subcontractor(s). \$ _____
2. Defective work not remedied (at estimated value by the Architect). \$ _____
3. Failure of Contractor to make proper payments to Subcontractors. \$ _____
4. Completion of contract (amount of work to be done exceeds contract balance unpaid). \$ _____
5. Damage to another contractor or subcontractor. \$ _____
6. Costs associated with alternative educational facilities due to project completion delay. \$ _____
7. Updated progress schedule per General or Supplemental Conditions (\$____ X ____ delinquent days). \$ _____
8. Overtime charges:
Architect Charges Hours () X Rate @ \$____.00/Hr. \$ _____
Consultants Charges Hours () X Rate @ \$____.00/Hr. \$ _____
Inspector Charges Hours () X Rate @ \$____.00/Hr. \$ _____
District Staff Hours () X Rate @ \$____.00/Hr. \$ _____
9. Testing/Retesting/Inspection/Re-Inspection @ 150% of value for services. \$ _____
10. Maintain current Record Drawings with current payment application (\$____/month). \$ _____
11. Failure to submit Daily Reports (\$____/month). \$ _____
12. Failure to submit listed items per specification section 01027. \$ _____
13. Failure to compensate Architect for substitution review. \$ _____
14. Overtime Charges of District for services provided. \$ _____
15. Failure to compensate Architect/District for review of proposed repair solutions. \$ _____
16. Failure to submit per diem wage rates with first pay application (\$____/month). \$ _____
17. Penalties for Violation of labor laws. \$ _____
18. Site Clean-up. \$ _____
19. Payments to indemnify, defend, or HOLD harmless the District. \$ _____
20. Extra Services for Architect. \$ _____
21. Extra Services required of the Project Inspector. \$ _____
22. Failure to correct QCR's. \$ _____
23. Liquidated Damages (both accrued to date and likely to accrue in future). \$ _____
24. Failure to correct Punch List. \$ _____
25. Failure to complete close-out items. \$ _____
26. Stop payment notices (withhold \$5,000 or 125%, whichever is greater). \$ _____
27. Any other items for which District may withhold under the Contract Documents or law. \$ _____

TOTAL TO BE WITHHELD (if total exceeds Line 9 on Page 1, District needs to
withhold from current progress payment)

\$ _____

PRE-BID/PRE-PROPOSAL MATERIAL SUBSTITUTION REQUEST

To be submitted at least ten days prior to the deadline for bids/proposals

Contract: Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 Project
Owner: Chualar Union School District

1. The undersigned bidder or proposer requests the following substitutions for the Owner's consideration. All requested substitutions must be listed on this form. All substitution requests shall be submitted in compliance with the Contract Documents, especially the Instructions to Bidders and General Conditions.
2. Please complete this table for each request, attaching additional sheets as necessary:

Specified Product or Material	Drawing Number or Specification Section	Proposed Substitution

3. For each requested substitution, the bidder or proposer must provide sufficient proof that the requested substitution is equal to the specified product or material in every respect.
4. All bids or proposals should be calculated and submitted based on substitution requests already approved by addendum and based on the assumption that other substitution requests have not been approved.

5. Bidder or proposer hereby certifies that the requested substitutions are equal or better in all respects to what is specified and will perform satisfactorily under the conditions and use indicated in the Contract Documents, unless otherwise noted.

BIDDER/PROPOSER: _____

BY: _____

CARB COMPLIANCE DECLARATION

To Be Executed by Bidder and Submitted (including attachments) Prior to Award of Contract

Owner: Chualar Union School District
Contract: Buildings A-F Reroofing Project, Chualar Elementary School,
24285 Lincoln Street, Chualar, CA 93925

Background

CALIFORNIA AIR RESOURCES BOARD (“CARB”) <https://ww2.arb.ca.gov/>

For any project awarded on or after January 1, 2024, Public Works Awarding Bodies are required to obtain valid CARB **Certificates of Reported Compliance (“CRC”)** from all contractors and listed subcontractors before awarding the contract for the project. The Public Works Awarding Body will be required to retain CRCs for three years after the project is complete, and the CRCs are subject to CARB review upon five calendar days' notice.

The Regulations apply to all “Public Works Awarding Bodies,” which phrase is broadly defined as “any public agency (state, county, city, school district, community college district, water district, sanitation district, transit district, etc.), or official thereof, in the state of California, that awards or enters into a contract for the erection, construction, alteration, repair, removal, or improvement of any public structure, building, road, or other public lands, property, or improvement of any kind.”

The bidder must fully execute this document and submit it, including the required attachments, prior to award of the contract for the above-captioned contract for the project. The bidder must attach the CRCs for the bidder and all of its subcontractors to this document.

The ARB Diesel Off-Road Online Reporting System (DOORS) reporting system is where the bidder and its subcontractors are able to obtain their CRCs: [DOORS \(ca.gov\)](https://ww2.arb.ca.gov/our-work/programs/truckstop-resources/road-zone). There is also an additional website that provides them with more information on the regulation along with FAQs and user guides. The website for the “Off-Road Zone” is <https://ww2.arb.ca.gov/our-work/programs/truckstop-resources/road-zone>.

If any questions, please call the DOORS Hotline at 877-593-6677 or email <doors@arb.ca.gov>. Please note that at this time DOORS staff has limited access to documents received via mail and fax is unavailable.

[Fact Sheet: Contracting Requirements | California Air Resources Board](https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-contracting-requirements)
<https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-contracting-requirements>

[Fact Sheet: Renewable Diesel Fuel Requirements | California Air Resources Board](#)

<https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-renewable-diesel-fuel-requirements>

[Fact Sheet: Added Vehicle Restrictions and Tier Phase-Out Requirements | California Air Resources Board](https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-added-vehicle-restrictions-and-tier-phase-out-requirements) <https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-added-vehicle-restrictions-and-tier-phase-out-requirements>

Declaration

I, _____ *[name of declarant]*, declare that I am the _____ *[title]* of _____ *[name of bidding contractor]*, the entity making and submitting a bid for the above contract for the project; that all CRCs for _____ *[name of bidding contractor]*, and for all of its listed subcontractors on the above contract, are attached to this declaration; that all of the attached CRCs are current and valid; and that the attached CRCs will allow the Owner to comply with the applicable CARB requirements in connection with the contract.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and executed on _____, 20__, at _____ *[city]*, _____ *[state]*.

Date: _____

Signature

Print Name: _____

Print Title: _____

CHANGE ORDER

For Design-Bid-Build Contract

Owner: Chualar Union School District
Contract: _____
Contractor: _____
Change Order No.: _____
Date: _____, 20__

IF NOT PREVIOUSLY DIRECTED, THE CONTRACTOR IS HEREBY DIRECTED TO PERFORM THE WORK REQUIRED BY THIS CHANGE ORDER.

DESCRIPTION OF AGREED CHANGES IN WORK OR CONTRACT (attach pages, if necessary):

TOTAL ADJUSTMENT TO CONTRACT PRICE BY THIS CHANGE ORDER: \$ _____

TOTAL ADJUSTMENT TO CONTRACT TIME BY THIS CHANGE ORDER: ____ calendar days

TOTAL ADJUSTMENT TO THE _____ MILESTONE DEADLINE BY THIS CHANGE ORDER: ____ calendar days

SUMMARY OF ADJUSTMENTS TO CONTRACT PRICE (OTHER THAN SPECIAL OR CONTINGENCY ALLOWANCES):

Original Contract Price (excluding allowances):	\$ _____
Prior Change Orders:	+ \$ _____
This Change Order:	+ \$ _____
Adjusted Contract Price (excluding allowances):	= \$ _____

(For payments from an allowance, use the Approval of Special Allowance Expenditure form or the Approval of Contingency Allowance Expenditure form.)

SUMMARY OF ADJUSTMENTS TO TIME FOR COMPLETION:

Original contract time:	_____	Calendar Days
Prior change order adjustments to contract time:	_____	Calendar Days
This change order's adjustment to contract time:	_____	Calendar Days
Adjusted contract time:	_____	Calendar Days

The compensation (time and cost) set forth in this change order comprises the total compensation due the Contractor for the change defined in the change order, including extra work and impact on unchanged work. Acceptance of this change order by Contractor constitutes a full and complete accord and satisfaction of any and all claims by Contractor arising out of or relating to the work and issues covered by the change order, including but not limited to claims for the following: Costs to perform the work; contract balance; contract retention; time; extended field, home office, and other overhead; acceleration, impact, disruption, and delay damages; any and all direct and indirect costs; claims by subcontractors and suppliers; and any and all other requests to the Owner for time or money, from any source and under any legal theory whatsoever, as to the subject of this change order. No signature under protest or accompanied by reservation of rights or protest language, or any other attempts to avoid such waiver shall be of any force or effect whatsoever. No additions or deletions to this change order shall be allowed, except with the approval of Owner's governing body. No language contained in backup material to any change order shall constitute a waiver of anything in this paragraph or the next paragraph, and such backup material shall be interpreted as though such language does not exist.

AS TO THE SCOPE OF THIS CHANGE ORDER, CONTRACTOR EXPRESSLY UNDERSTANDS AND AGREES TO WAIVE THE PROVISIONS OF, AND ALL RIGHTS AND BENEFITS AFFORDED BY, CALIFORNIA CIVIL CODE SECTION 1542, WHICH PROVIDES IN FULL AS FOLLOWS:

A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.

This Change Order is hereby agreed to, accepted, and approved, and will be binding and enforceable upon signature by Contractor and approval by the Owner's governing body.

On behalf of Owner:

On behalf of Contractor:

Title

Title

Name

Name

Signature

Signature

Date

Date

Approval by Architect:

Title

Name

Signature

Date

APPROVAL OF CONTINGENCY ALLOWANCE EXPENDITURE

Owner: Chualar Union School District
Contract: _____
Contractor: _____

Contingency Allowance Expenditure Approval No. _____

Date: _____, 20__

IF NOT PREVIOUSLY DIRECTED, YOU ARE HEREBY DIRECTED TO PERFORM THE WORK DESCRIBED IN THIS APPROVAL.

DESCRIPTION OF WORK TO BE PERFORMED UNDER CONTINGENCY ALLOWANCE
(specifically refer to attached pages or incorporated documents):

AGREED TOTAL AMOUNT TO BE PAID FROM THE CONTINGENCY ALLOWANCE UPON
COMPLETION OF THE ABOVE WORK: \$ _____

SUMMARY OF ADJUSTMENTS TO CONTINGENCY ALLOWANCE:

Original Amount of Contingency:		\$ _____
Board-Approved Additions to Contingency:	+	\$ _____
Adjusted Amount of Contingency:	=	\$ _____
Previously Approved Contingency Expenditures:	-	\$ _____
This Approved Contingency Expenditure:	-	\$ _____
Remaining Amount of Contingency:	=	\$ _____

NOTE:

- Any unspent contingency allowance amounts shall be retained by the Owner at the end of the Contract.
- If the approved amount of the contingency allowance expenditure exceeds the remaining amount of the contingency allowance, then the excess must be processed and paid via change order.
- If contractor desires a time extension for the work that is the subject of this contingency allowance expenditure approval, then the time extension must be timely requested and processed via the contract procedures for a change order.

The compensation set forth in this approval comprises the total compensation due to the Contractor upon completion of the work described, including extra work, and the impact on unchanged work. Acceptance by the Contractor of this approval constitutes a full and complete accord and satisfaction of any and all claims by Contractor arising out of or relating to the work and issues covered by the approval, including but not limited to claims for contract

balance and retention, extended field, home office or other overhead, all acceleration, impact, disruption, and delay damages, any and all other direct and/or indirect costs, claims by subcontractors and supplier, and any and all other claims against the Owner for money, from any source and under any legal theory whatsoever, as to the subject of this approval. No signature under protest or accompanied by reservation of rights or protest language, or any other attempts to avoid such waiver shall be of any force or effect whatsoever. No additions or deletions to this approval shall be allowed, except with written permission of the Owner. No language contained in backup material to this approval shall constitute a waiver of this paragraph or the next paragraph, and such backup material shall be interpreted as though such language does not exist.

CONTRACTOR EXPRESSLY UNDERSTANDS AND AGREES TO WAIVE THE PROVISIONS OF, AND ALL RIGHTS AND BENEFITS AFFORDED BY, CALIFORNIA CIVIL CODE SECTION 1542, WHICH PROVIDES IN FULL AS FOLLOWS:

“A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS THAT THE CREDITOR OR RELEASING PARTY DOES NOT KNOW OR SUSPECT TO EXIST IN HIS OR HER FAVOR AT THE TIME OF EXECUTING THE RELEASE, AND THAT, IF KNOWN BY HIM OR HER, WOULD HAVE MATERIALLY AFFECTED HIS OR HER SETTLEMENT WITH THE DEBTOR OR RELEASED PARTY.”

This Approval of Contingency Allowance Expenditure is hereby agreed to, accepted, and approved, and will be binding and enforceable.

On behalf of Owner:

Title

Name

Signature

Date

On behalf of Contractor:

Title

Name

Signature

Date

This is a fiduciary account created by statute, Public Contract Code section 22300. The funds deposited in this account shall not be released to Contractor or any other person or entity, other than Owner, including pursuant to any purported lien or writ of attachment or execution, without the prior written, express approval of Owner.

ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION

This Escrow Agreement is made and entered into by and between the Chualar Union School District, whose address is 24285 Lincoln Street, Chualar, CA 93925 (hereinafter called "Owner"); _____, whose address is _____ (hereinafter called "Contractor"); and _____, a state or federally chartered bank in California whose address is _____ (hereinafter called "Escrow Agent").

For the consideration hereinafter set forth, the Owner, Contractor, and Escrow Agent agree as follows:

1. Pursuant to section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by the Owner pursuant to the contract between the Owner and Contractor in the amount of _____ Dollars (\$ _____), and dated _____, 20____, for the Buildings A-F Reroofing Project, Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925 scope of work (the "Contract"). Alternatively, on written request of the Contractor, the Owner shall make payments of the retention earnings directly to the Escrow Agent. When Contractor deposits the securities as a substitute for retention earnings, the Escrow Agent shall notify the Owner within ten (10) calendar days of the deposit. The market value of the securities at the time of the substitution, as valued by the Owner, shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Contract between the Owner and Contractor. If the Owner determines that the securities are not adequate it will notify Contractor and Escrow Agent, and Contractor shall deposit additional security as further determined by the Owner. Securities shall be held in the name of the Owner and shall designate the Contractor as the beneficial owner.
2. Thereafter, Owner shall make progress payments to the Contractor for such funds which otherwise would be withheld from progress payments pursuant to the Contract provisions, provided that the Escrow Agent holds securities in the form and amount specified above.

3. Pursuant to Public Contract Code section 22300, as an alternative to the procedures set forth above, Contractor may request in writing that the Owner pay retention amounts directly to Escrow Agent. When the Owner makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for benefit of the Contractor until such time as the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the Owner pays the Escrow Agent directly.
4. The Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the Owner. These expenses and payment terms shall be determined by the Owner, Contractor and Escrow Agent.
5. The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the Owner.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from Owner to the Escrow Agent that Owner consents to the withdrawal of the amount sought to be withdrawn by Contractor.
7. The Owner shall have the right to draw upon the securities or any amount paid directly to Escrow Agent in the event of default by the Contractor. Upon seven (7) days written notice to the Escrow Agent from the Owner of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash, including any amounts paid directly to Escrow Agent pursuant to Section 3 above, as instructed by Owner. Escrow Agent shall not be concerned with the validity of any notice of default given by Owner pursuant to this paragraph, and shall promptly comply with Owner's instructions to pay over said escrowed assets. Escrow Agent further agrees to not interplead the escrowed assets in response to a conflicting demand and hereby waives any present or future opportunity of interpleader.
8. Upon receipt of written notification from the Owner certifying that the Contract is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payment of fees and charges.
9. Escrow Agent shall rely on the written notifications from the Owner and Contractor pursuant to Sections (4), (5), (6), (7) and (8) of this Agreement and the

Owner and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

10. The names of the persons who are authorized to give written notice or to receive written notice on behalf of the Owner, the Contractor and the Escrow Agent in connection with the foregoing, and exemplars of their respective signatures are as follows:

ON BEHALF OF OWNER:

Signature

Typewritten Name

Title

ON BEHALF OF CONTRACTOR:

Signature

Typewritten Name

Title

ON BEHALF OF ESCROW AGENT:

Signature

Typewritten Name

Title

IN WITNESS WHEREOF, the parties have executed this Agreement by their proper officers on the date first set forth above.

OWNER:

Signature

Typewritten Name

Title

CONTRACTOR:

Signature

Typewritten Name

Title

ESCROW AGENT:

Signature

Typewritten Name

Title

At the time the Escrow Account is opened, the Owner and Contractor shall deliver to the Escrow Agent a fully executed counterpart of this Agreement.

CHECKLIST FOR BID DOCUMENTS

Chualar Union School District

Contract: Buildings A-F Reroofing Project, Chualar Elementary School,
24285 Lincoln Street, Chualar, CA 93925

Bidder: _____

Bid Opening Date: _____, 20__

Planned Date of Award: _____, 20__

<u>Name of Document</u>	<u>Submitted?</u>
Required with Bid:	
Bid Form, including proof of signers' authority	
Bid Security	
Designation of Subcontractors	
Noncollusion Declaration	
Sufficient Funds Declaration	
Fingerprinting Notice and Acknowledgement	
Workers' Compensation Certification	
Iran Contracting Act Certification <i>(if required for contract)</i>	
Responses to Contractor Questionnaire <i>(if required for contract)</i>	
DVBE Certification <i>(if required for contract)</i>	
DVBE Worksheet <i>(if required for contract)</i>	
Proof of Registration per Labor Code §1725.5	
Required Before Award of Contract:	
CARB Compliance Declaration	
Required Before Commencement of Work:	
Drug-Free Workplace Certification	
Independent Contractor Student Contact Form	
Performance Bond	
Payment Bond	
Insurance Certificates	
Additional Insured Endorsements	
Insurance Declaration Pages	
Roof Project Certification <i>(if required for contract)</i>	

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Work by Owner.
5. Work under separate contracts.
6. Future work.
7. Purchase contracts.
8. Owner-furnished products.
9. Contractor-furnished, Owner-installed products.
10. Access to site.
11. Coordination with occupants.
12. Work restrictions.
13. Specification and drawing conventions.
14. Miscellaneous provisions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Re-Roofing.

1. Project Location: 24285 Lincoln Street, Chualar, CA 93925

B. Owner: Chualar Union School District

1. Owner's Representative: David Peartree, Peartree+Belli Architects,
david@peartreebelli.com, 831-424-4620x104

- C. Other Owner Consultants: The Owner has retained the following design professionals who have prepared designated portions of the Contract Documents:

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Re-roofing of Buildings A-F and replacement of associated gutters and downspouts.
- B. Type of Contract:
 - 1. Project will be constructed under a single prime contract.

1.5 PHASED CONSTRUCTION

- A. The Work shall be conducted in one phase.

1.6 WORK BY OWNER

- A. General: Cooperate fully with Owner so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by Owner. Coordinate the Work of this Contract with work performed by Owner.

1.7 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.8 PURCHASE CONTRACTS

- 1. No purchase contracts have been negotiated for this project.

1.9 OWNER-FURNISHED PRODUCTS

- A. No owner-furnished products.

1.10 CONTRACTOR-FURNISHED, OWNER-INSTALLED PRODUCTS

- A. No contractor-furnished, owner-installed products.

1.11 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.12 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and subject buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.13 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 1. Notify Owner 1 week in advance of proposed utility interruptions.
 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 1. Notify Owner not less than two days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.

- E. Nonsmoking Building: Smoking is not permitted within limits of the entire campus.
- F. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- H. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with Owner's representative.

1.14 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.15 MISCELLANEOUS PROVISIONS (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Rooftop equipment bases and support curbs.
 - 2. Wood blocking, cants, and nailers.

1.3 DEFINITIONS

- A. Exposed Framing: Framing not concealed by other construction.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. RIS: Redwood Inspection Service.
 - 4. SPIB: The Southern Pine Inspection Bureau.
 - 5. WCLIB: West Coast Lumber Inspection Bureau.
 - 6. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 - 3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
1. Wood-preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Engineered wood products.
 4. Shear panels.
 5. Power-driven fasteners.
 6. Powder-actuated fasteners.
 7. Expansion anchors.
 8. Metal framing anchors.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Certified Wood: Materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship for the following:
1. Dimension lumber framing.
 2. Miscellaneous lumber.

- B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- C. Maximum Moisture Content of Lumber: 15 percent.
- D. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
 - 1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 - 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated.
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.3 DIMENSION LUMBER FRAMING

- A. Joists, Rafters, and Other Framing Not Listed Above: Select Structural No. 2 grade.
 - 1. Species:

- a. Hem-fir (north); NLGA.
 - b. Southern pine; SPIB.
 - c. Douglas fir-larch; WCLIB or WWPA.
 - d. Mixed southern pine; SPIB.
 - e. Spruce-pine-fir; NLGA.
 - f. Douglas fir-south; WWPA.
 - g. Hem-fir; WCLIB or WWPA.
 - h. Douglas fir-larch (north); NLGA.
 - i. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
- B. Joists, Rafters, and Other Framing Not Listed Above: Any species of machine stress-rated dimension lumber with a grade of not less than 2400f-2.0E.
- C. Joists, Rafters, and Other Framing Not Listed Above: Any species and grade with a modulus of elasticity of at least 1,500,000 psi thickness and 12-inch nominal width for single-member use.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
 7. Utility shelving.
- B. For items of dimension lumber size, provide **Construction or No. 2 and any of the following species and the following species:**
1. Hem-fir (north); NLGA.
 2. Mixed southern pine; SPIB.
 3. Spruce-pine-fir; NLGA.
 4. Hem-fir; WCLIB or WWPA.
 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
 6. Western woods; WCLIB or WWPA.
 7. Northern species; NLGA.
 8. Eastern softwoods; NeLMA.
- C. For concealed boards, provide lumber with **15** percent maximum moisture content and the following species and grades:
1. Western woods; Construction or No. 2 Common grade; WCLIB or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A with ASTM A 563hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

- C. plates and foundation walls.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- F. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:
 - 1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than **96 inches (2438 mm)** o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
 - 2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than **96 inches (2438 mm)** o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and **2-inch nominal- (38-mm actual-)** thickness.
 - 3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than **100 sq. ft. (9.3 sq. m)** and to solidly fill space below partitions.
 - 4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than **20 feet (6 m)** o.c.
- G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- H. Comply with AWP A M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
- J. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- D. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

END OF SECTION 061000

SECTION 070150.19 - PREPARATION FOR REROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Full tear-off of entire roof.
2. Partial tear-off of roof areas indicated.
3. Re-cover preparation of entire roof and of roof areas indicated.
4. Removal of base flashings.
5. Temporary roofing.

B. Related Requirements:

1. Section 011000 "Summary" for use of the premises and phasing requirements.
2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

1.3 UNIT PRICES

- A. Not used.

1.4 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.
- B. Roof Re-Cover Preparation: Existing roofing system is to remain and be prepared for new roof installed over it.
- C. Full Roof Tear-Off: Removal of existing roofing system from deck.
- D. Partial Roof Tear-Off: Removal of selected components and accessories from existing roofing system.

1.5 ACTION SUBMITTALS

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

- B. Shop Drawings: Include plans, sections, and details.
- C. Temporary Roofing Submittal: Product data and description of temporary roofing system. If temporary roof remains in place, include surface preparation requirements needed to receive permanent roof, and submit a letter from roofing manufacturer, stating acceptance of the temporary roof and that its inclusion does not adversely affect the roofing system's resistance to fire and wind.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
 - 1. Include certificate that Installer is approved by warrantor of existing roofing system.
 - 2. Include certificate that Installer is licensed to perform asbestos abatement.
- B. Fastener pull-out test report.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- D. Landfill Records: Indicate receipt and acceptance of demolished roofing materials and hazardous wastes, such as asbestos-containing materials, by a landfill facility licensed to accept them.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Approved by warrantor of existing roofing system to work on existing roofing and licensed to perform asbestos abatement in the state or jurisdiction where Project is located.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Chualar Elementary School, 24285 Lincoln St, Chualar, CA 93925
 - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer, including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing, including installers of roof deck, roof accessories, and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing system tear-off and replacement, including, but not limited to, the following:
 - a. Reroofing preparation, including roofing system manufacturer's written instructions.

- b. Temporary protection requirements for existing roofing system components that are to remain.
- c. Existing roof drains and roof drainage during each stage of reroofing, and roof-drain plugging and plug removal.
- d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to avoid delays.
- e. Existing roof deck conditions requiring notification of Architect.
- f. Existing roof deck removal procedures and Owner notifications.
- g. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
- h. Structural loading limitations of roof deck during reroofing.
- i. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that affect reroofing.
- j. HVAC shutdown and sealing of air intakes.
- k. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
- l. Asbestos removal and discovery of asbestos-containing materials.
- m. Governing regulations and requirements for insurance and certificates if applicable.
- n. Existing conditions that may require notification of Architect before proceeding.

1.8 FIELD CONDITIONS

- A. Existing Roofing System: Asphalt Shingle and **Built-up asphalt** roofing.
- B. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations are not disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding are maintained by Owner as far as practical.
 - 1. A roof moisture survey of existing roofing system is available for Contractor's reference.
 - 2. The results of an analysis of test cores from existing roofing system are available for Contractor's reference.

- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
 - 1. Remove only as much roofing in one day as can be made watertight in the same day.
- G. Hazardous Materials: It is not expected that hazardous materials, such as asbestos-containing materials, will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work. Existing roof will be left no less watertight than before removal.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing roofing system warranty. Notify warrantor before proceeding.
 - 1. Notify warrantor of existing roofing system on completion of reroofing, and obtain documentation verifying that existing roofing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION MATERIALS

- A. Expanded Polystyrene (EPS) Insulation: ASTM C 578.
- B. Plywood: DOC PS1, Grade CD Exposure 1.
- C. OSB: DOC PS2, Exposure 1.

2.2 TEMPORARY ROOFING MATERIALS

- A. Design and selection of materials for temporary roofing are Contractor's responsibilities.
- B. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft.
- C. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet.
- D. Glass-Fiber Felts: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.
- E. Asphalt Primer: ASTM D 41/D 41M.

- F. Roofing Asphalt: ASTM D 312, Type III or IV.
- G. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Global's "Approval Guide."

2.3 INFILL AND REPLACEMENT MATERIALS

- A. Use infill materials matching existing roofing system materials unless otherwise indicated.
 - 1. Infill materials are specified in **Section 075113 "Built-up Asphalt Roofing"** unless otherwise indicated.

2.4 RE-COVER BOARDS

- A. Re-Cover Board: ASTM C 208, Type II, [**Grade 1**] [**Grade 2**], cellulosic-fiber insulation board; 1/2 inch thick.
- B. Re-Cover Board: Fan-folded, unfaced, extruded-polystyrene board insulation; 3/8-inch nominal thickness.
- C. Re-Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate; 5/8 inch thick.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corporation; Dens Deck, Dens Deck DuraGuard, Dens Deck Prime, GlasRoc Sheathing, GlasRoc Sheathing Type X, Gold Bond eXP Extended Exposure Sheathing, Securock Glass Mat Roof Board.
 - b. Georgia Pacific Corporation.
 - c. National Gypsum Company.
 - d. Temple-Inland, Inc.
 - e. USG Corporation.
- D. Re-Cover Board: ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water-resistant gypsum substrate; 5/8 inch thick.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. USG Corporation; Securock Gypsum-Fiber Roof Board.
- E. Re-Cover Board: ASTM C 728, perlite board; 1 inch thick with top surface seal coated.
- F. Fasteners: Factory-coated steel fasteners, No. 14, and metal or plastic plates listed in FM Global's "Approval Guide," designed for fastening re-cover boards to deck and acceptable to new roofing system manufacturer.

2.5 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Shut off rooftop utilities and service piping before beginning the Work.
- B. Test existing roof drains to verify that they are not blocked or restricted. Immediately notify Architect of any blockages or restrictions.
- C. Protect existing roofing system that is not to be reroofed.
 - 1. Loosely lay 1-inch minimum thick, expanded polystyrene (EPS) insulation over existing roofing in areas indicated. Loosely lay 15/32-inch plywood or OSB panels over EPS. Extend EPS past edges of plywood or OSB panels a minimum of 1 inch.
 - 2. Limit traffic and material storage to areas of existing roofing that have been protected.
 - 3. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
- D. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- E. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- F. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing roofing system components that are to remain.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Remove aggregate ballast from roofing. Retain first paragraph below for existing aggregate-surfaced built-up bituminous roofing.

- C. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing using a power broom.
- D. Remove pavers and accessories from roofing. Store and protect pavers and accessories for reuse. Discard cracked pavers.
- E. Remove ballast, protection mat, and extruded-polystyrene insulation from protected roofing membrane.
 - 1. Discard extruded-polystyrene insulation that is damaged or exceeds 8 lb/cu. ft.
 - 2. Store extruded-polystyrene insulation for reuse and protect from physical damage.
 - 3. Store ballast for reuse.
- F. Full Roof Tear-Off: Where indicated, remove existing roofing and other roofing system components down to the deck.
 - 1. Remove substrate board vapor retarder roof insulation and cover board.
 - 2. Remove wood blocking, curbs, and nailers.
 - 3. Remove fasteners from deck.
- G. Partial Roof Tear-Off: Where indicated, remove existing roofing and immediately check for presence of moisture by visually observing substrate that is to remain.
 - 1. Remove wet or damp materials below existing roofing and above deck.
 - 2. Inspect wood blocking, curbs, and nailers for deterioration and damage. If wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.
 - 3. Remove fasteners from deck.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 INFILL MATERIALS INSTALLATION

- A. Immediately after roof tear-off, and inspection and repair, if needed, of deck, fill in tear-off areas to match existing roofing system construction.
 - 1. Installation of infill materials is specified in **Section 075113 "Built-up Asphalt Roofing."**
 - 2. Installation of wood blocking, curbs, and nailers is specified in Section 061000 "Rough Carpentry."

- B. Install new roofing patch over roof infill area. If new roofing is installed the same day tear-off is made, roofing patch is not required.

3.5 TEMPORARY ROOFING

- A. Install approved temporary roofing over area to be reroofed.
- B. Install temporary roofing over area to be reroofed. Install two glass-fiber felts lapping each sheet 19 inches over preceding sheet. Embed glass-fiber felt in a solid mopping of hot roofing asphalt applied within equiviscous temperature range. Glaze-coat completed surface with hot roofing asphalt.
- C. Remove temporary roofing before installing new roofing.
- D. Prepare temporary roof to receive new roofing Restore temporary roofing to watertight condition. Obtain approval for temporary roof substrate from roofing manufacturer and Architect before installing new roof.

3.6 ROOF RE-COVER PREPARATION

- A. Remove blisters, ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new re-cover boards from conforming to substrate.
 - 1. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing with a power broom.
 - 2. Scarify surface of sprayed polyurethane foam as necessary to achieve a sufficiently uniform plane to receive new re-cover boards.
 - 3. Broom clean existing substrate.
 - 4. Verify that existing substrate is dry before proceeding with installation of re-cover boards. Spot check substrates with an electrical capacitance moisture-detection meter.
 - 5. Remove materials that are wet or damp. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.
- B. Remove blisters, ridges, buckles, mechanically attached roofing fastener buttons projecting above roofing, and other substrate irregularities from existing roofing that inhibit new re-cover boards or roofing from conforming to substrate.
 - 1. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing with a power broom.
 - 2. Shave surface of sprayed polyurethane foam as necessary to achieve a sufficiently uniform plane to receive new re-cover boards or roofing.
 - 3. Broom clean existing substrate.
 - 4. Coordinate with Owner's inspector to schedule times for tests and inspections.
 - 5. Verify that existing substrate is dry before proceeding with installation. Spot check substrates with an electrical capacitance moisture-detection meter.
 - 6. Remove materials that are wet and damp. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

- C. Remove blisters and areas of roofing not fully adhered.
- D. Remove mechanically attached roofing fastener buttons projecting above roofing and other substrate irregularities that inhibit new re-cover boards from conforming to substrate.
 - 1. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing with a power broom.
 - 2. Clean substrate of contaminants, such as dirt, debris, oil, and grease, that can affect adhesion of coated foamed roofing.
 - 3. Power vacuum the existing roof surface. If recommended by foam manufacturer, prime dried surface at recommended rate with recommended primer.
 - 4. Scarify surface of coated polyurethane roofing as necessary to achieve a suitable substrate for new roofing.
 - 5. Verify that surface is dry by pressing litmus paper to surface areas most likely to retain moisture, such as shaded areas and low spots. If paper changes color, surface is too wet to apply foam.

3.7 BASE FLASHING REMOVAL

- A. Remove existing base flashings. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.
- C. Inspect parapet sheathing, wood blocking, curbs, and nailers for deterioration and damage. If parapet sheathing, wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.
- D. Remove existing parapet sheathing and replace with new parapet sheathing to comply with Section 061600 "Sheathing." If parapet framing, wood blocking, curbs, or nailers have deteriorated, immediately notify Architect.
- E. When directed by Architect, replace parapet framing, wood blocking, curbs, and nailers to comply with Section 061000 "Rough Carpentry."

3.8 FASTENER PULL-OUT TESTING

- A. Perform fastener pull-out tests according to SPRI FX-1, and submit test report to roofing manufacturer before installing new roofing system.
 - 1. Obtain roofing manufacturer's approval to proceed with specified fastening pattern. Roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

3.9 RE-COVER BOARD INSTALLATION

- A. Install re-cover boards over roof insulation or roofing with long joints in continuous straight lines and end joints staggered between rows. Loosely butt re-cover boards together.
 - 1. Tape joints of re-cover boards if required by roofing manufacturer.
- B. Fasten re-cover boards to resist wind-uplift pressure at corners, perimeter, and field of roof specified in **Section 075113 "Built-up Asphalt Roofing."**
 - 1. Install additional fasteners near board corners and edges as necessary to conform boards to substrate and to adjacent boards.

3.10 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Asphalt shingles.
 - 2. Underlayment.

- B. Related Sections:

- 1. Section 061000 "Rough Carpentry."
 - 2. Section 076200 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, counterflashings and flashings.
 - 3. Section 077200 "Roof Accessories" for ridge vents.

1.3 DEFINITION

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

1.4 ACTION SUBMITTALS

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

- B. Samples for Initial Selection: For each type of asphalt shingle ridge and hip cap shingles, ridge vent and exposed valley lining indicated.

- 1. Include similar Samples of trim and accessories involving color selection.

- C. Samples for Verification: For the following products, of sizes indicated, to verify color selected:

- 1. Asphalt Shingle: Full size.
 - 2. Ridge and Hip Cap Shingles: Full size.
 - 3. Ridge Vent: 12-inch long Sample.
 - 4. Exposed Valley Lining: 12 inches square.
 - 5. Self-Adhering Underlayment: 12 inches square.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for asphalt shingles.
- C. Research/Evaluation Reports: For each type of asphalt shingle required, from the ICC.
- D. Warranties: Sample of special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of asphalt shingle to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Asphalt Shingles: **100 sq. ft** of each type, in unbroken bundles.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain ridge and hip cap shingles ridge vents, felt underlayment and self-adhering sheet underlayment from single source from single manufacturer.
- C. Fire-Resistance Characteristics: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for fire resistance per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockups for asphalt shingles including related roofing materials.
 - a. Size: 48 inches long by 48 inches wide
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

- E. Preinstallation Conference: Conduct conference at Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.10 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install asphalt shingles until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
 1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.11 WARRANTY

- A. Special Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Manufacturing defects.
 - b. Structural failures including failure of asphalt shingles to self-seal after a reasonable time.
 2. Material Warranty Period: Limited Lifetime from date of Substantial Completion, prorated, with first five years non-prorated.
 3. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 80 mph for 10 years from date of Substantial Completion.
 4. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.
 5. Workmanship Warranty Period: 10 years from date of Substantial Completion.
- B. Special Project Warranty: Roofing Installer's Warranty, or warranty form at end of this Section, signed by roofing Installer, covering the Work of this Section, in which roofing Installer agrees

to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 1. Basis-of-Design Product: Subject to compliance with requirements, provide GAF Timberline NS or comparable product by one of the following:
 - a. CertainTeed Corporation.
 - b. Emco Building Products Corp.
 - c. GAF Materials Corporation.
 - d. Owens Corning.
 2. Butt Edge: Straight cut.
 3. Strip Size: Manufacturer's standard.
 4. Algae Resistance: Granules treated to resist algae discoloration.
 5. Color and Blends: As indicated by manufacturer's designations
 6. Asphalt shingle impact-resistance test criteria are set by UL 2218, which simulates hailstones falling at peak velocity. Retain option in first paragraph below if required.
- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.2 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226 or ASTM D 4869, Type I, asphalt-saturated organic felts, nonperforated.
- B. Self-Adhering Sheet Underlayment, Granular Surfaced: ASTM D 1970, minimum of 55-mil-thick sheet; glass-fiber-mat-reinforced, SBS-modified asphalt; mineral-granule surfaced; with release paper backing; cold applied.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. ALCO-NVC Inc.
 - b. Atlas Roofing Corporation.
 - c. Carlisle Coatings & Waterproofing, Inc.
 - d. CertainTeed Corporation.
 - e. GAF Materials Corporation.
 - f. Henry Company.
 - g. IKO.
 - h. Johns Manville.
 - i. Owens Corning.

- C. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil-thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carlisle Coatings & Waterproofing, Inc.
 - b. Grace, W. R. & Co. - Conn.
 - c. Henry Company.
 - d. Johns Manville.
 - e. Owens Corning.
 - f. Polyguard Products, Inc.
 - g. Protecto Wrap Company.
- D. Self-Adhering Sheet Underlayment, High Temperature: Minimum of 30- to 40-mil thick, slip-resisting, polyethylene-film-reinforced top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release paper backing; cold applied.
1. Thermal Stability: Stable after testing at 240 deg F; ASTM D 1970.
 2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.
 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Carlisle Coatings & Waterproofing, Inc.
 - b. Grace, W. R. & Co. - Conn.
 - c. Henry Company.
- E. Granular-Surfaced Valley Lining: ASTM D 3909, mineral-granular-surfaced, glass-based, asphalt roll roofing; 36 inches wide.

2.3 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard, rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and external deflector baffles; for use under ridge shingles.
1. Manufacturers: Subject to compliance with requirements.
- B. Flexible Ridge Vent: Manufacturer's standard, compression-resisting, three-dimensional, open-nylon or polyester-mat filter bonded to a nonwoven, non-wicking, geotextile fabric cover.
1. Manufacturers: Subject to compliance with requirements.

2.4 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch- diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 - 1. Sheet Metal: To match existing.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item.
 - 1. Apron Flashings: Fabricate with lower flange a minimum of 4 inches over and 4 inches beyond each side of downslope asphalt shingles and 6 inches up the vertical surface.
 - 2. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 4 inches over the underlying asphalt shingle and up the vertical surface.
 - 3. Cricket or Backer Flashings: Fabricate with concealed flange extending a minimum of 18 inches beneath upslope asphalt shingles and 6 inches beyond each side of skylight and 6 inches above the roof plane.
 - 4. Open-Valley Flashings: Fabricate in lengths not exceeding 10 feet with 1-inch- high, inverted-V profile at center of valley and equal flange widths of 10 inches.
 - 5. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof-deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.
- C. Vent Pipe Flashings: ASTM B 749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches from pipe onto roof.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.

2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Single-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with felt underlayment nails.
 1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of felt not less than 6 inches over self-adhering sheet underlayment.
 2. Install fasteners at no more than 36 inch o.c.
- C. Double-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Install a 19-inch- wide starter course at eaves and completely cover with full-width second course. Install succeeding courses lapping previous courses 19 inches in shingle fashion. Lap ends a minimum of 6 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with felt underlayment nails.
 1. Apply a continuous layer of asphalt roofing cement over starter course and on felt underlayment surface to be concealed by succeeding courses as each felt course is installed. Apply over entire roof.
 2. Install felt underlayment on roof sheathing not covered by self-adhering sheet underlayment. Lap edges over self-adhering sheet underlayment not less than 3 inches in direction to shed water.
 3. Terminate felt underlayment extended up not less than 4 inches against sidewalls, curbs, chimneys, and other roof projections.
 4. Install fasteners at no more than 36 inch o.c.
- D. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated below, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches.
 1. Eaves: Extend from edges of eaves 24 inches beyond interior face of exterior wall.
 2. Rakes: Extend from edges of rake 24 inches beyond interior face of exterior wall.
 3. Valleys: Extend from lowest to highest point 18 inches on each side.
 4. Hips: Extend 18 inches on each side.
 5. Ridges: Extend 36 inches on each side without obstructing continuous ridge vent slot.

6. Sidewalls: Extend beyond sidewall 18 inches, and return vertically against sidewall not less than 4 inches.
 7. Dormers, Chimneys, Skylights, and Other Roof-Penetrating Elements: Extend beyond penetrating element 18 inches, and return vertically against penetrating element not less than 4 inches.
 8. Roof Slope Transitions: Extend 18 inches on each roof slope.
- E. Concealed Valley Lining: Comply with NRCA's recommendations. Install a 36-inch- wide felt underlayment centered in valley. Fasten to roof deck with felt underlayment nails.
1. Lap roof-deck felt underlayment over valley felt underlayment at least 6 inches.
 2. Install a 36-inch- wide strip of granular-surfaced valley lining centered in valley, with granular-surface face up. Lap ends of strips at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten to roof deck with roofing nails.
- F. Metal-Flushed, Open-Valley Underlayment: Install two layers of 36-inch wide felt underlayment centered in valley. Stagger end laps between layers at least 72 inches. Lap ends of each layer at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Fasten each layer to roof deck with felt underlayment nails.
1. Lap roof-deck felt underlayment over first layer of valley felt underlayment at least 6 inches.
- G. Granular-Surfaced, Open-Valley Lining: Comply with NRCA's recommendations. Install a 36-inch- wide felt underlayment centered in valley. Fasten to roof deck with felt underlayment nails.
1. Lap roof-deck felt underlayment over valley felt underlayment at least 6 inches.
 2. Install an 18-inch- wide strip of valley lining centered in valley, with granular-surface face down. Install a second 36-inch- wide strip of valley lining centered in valley, with granular-surface face up. Lap ends of each strip at least 12 inches in direction to shed water, and seal with asphalt roofing cement. Stagger end laps between succeeding strips at least 72 inches. Fasten each strip to roof deck with roofing nails.

3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
1. Install metal flashings according to recommendations in ARMA's "Residential Asphalt Roofing Manual" and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.

- D. Cricket or Backer Flashings: Install against the roof-penetrating element extending concealed flange beneath upslope asphalt shingles and beyond each side.
- E. Open-Valley Flashings: Install centered in valleys, lapping ends at least 8 inches in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.
 - 1. Secure hemmed flange edges into metal cleats spaced 12 inches apart and fastened to roof deck.
 - 2. Adhere 9-inch- wide strip of self-adhering sheet to metal flanges and to self-adhering sheet underlayment.
- F. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.
- G. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.
- H. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 ASPHALT SHINGLE INSTALLATION

- A. General: Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles 3/4 inch over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.
- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full-length first course followed by cut second course, repeating alternating pattern in succeeding courses.
- F. Fasten asphalt shingle strips with the number of roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
 - 2. When ambient temperature during installation is below 50 deg F, seal asphalt shingles with asphalt roofing cement spots.

- G. Woven Valleys: Extend succeeding asphalt shingle courses from both sides of valley 12 inches beyond center of valley, weaving intersecting shingle-strip courses over each other. Use one-piece shingle strips without joints in valley.
1. Do not nail asphalt shingles within 6 inches (150 mm) of valley center.
- H. Closed-Cut Valleys: Extend asphalt shingle strips from one side of valley 12 inches beyond center of valley. Use one-piece shingle strips without joints in valley. Fasten with extra nail in upper end of shingle. Install asphalt shingle courses from other side of valley and cut back to a straight line 2 inches short of valley centerline. Trim upper concealed corners of cut-back shingle strips.
1. Do not nail asphalt shingles within 6 inches of valley center.
 2. Set trimmed, concealed-corner asphalt shingles in a 3-inch- wide bed of asphalt roofing cement.
- I. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips. Maintain uniform width of exposed open valley from highest to lowest point.
1. Set valley edge of asphalt shingles in a 3-inch- wide bed of asphalt roofing cement.
 2. Do not nail asphalt shingles to metal open-valley flashings.
- J. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- K. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

3.5 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS **<Insert name>** of **<Insert address>**, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
1. Owner: Chualar Union School District
 2. Address: 24285 Lincoln Street, Chualar, CA 93925
 3. Building Name/Type: Buildings A-F
 4. Acceptance Date: **<Insert date>**.
 5. Warranty Period: **<Insert time>**.
 6. Expiration Date: **<Insert date>**.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be

made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. Lightning;
 - b. Peak gust wind speed exceeding 80 mph;
 - c. Fire;
 - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. Vapor condensation on bottom of roofing; and
 - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this **<Insert day>** day of **<Insert month>**, **<Insert year>**.

1. Authorized Signature: **<Insert signature>**.
2. Name: **<Insert name>**.
3. Title: **<Insert title>**.

END OF SECTION 073113

SECTION 075113 - BUILT-UP ASPHALT ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Built-up asphalt roofing.
 - 2. Vapor retarder.
 - 3. Roof insulation.
- B. Related Requirements:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
 - 2. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

- A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to Work of this Section.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing.

7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For built-up roofing. Include plans, elevations, sections, details, and attachments to other work, including:
 1. Base flashings and built-up terminations.
 2. Tapered insulation, including slopes.
 3. Crickets, saddles, and tapered edge strips, including slopes.
 4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
- C. Samples for Verification: For the following products:
 1. Cap sheet, of color required.
 2. Flashing sheet, of color required.
 3. Aggregate surfacing material in gradation and color required.
 4. Roof paver, in each color and texture required.
 5. Walkway pads or rolls, of color required.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Manufacturer Certificates: Signed by roofing manufacturer certifying that built-up roofing complies with requirements specified in "Performance Requirements" Article.
 1. Submit evidence of compliance with performance requirements.
- C. Product Test Reports: For components of built-up roofing, for tests performed by manufacturer and witnessed by a qualified testing agency.
- D. Research/Evaluation Reports: For components of built-up roofing, from ICC-ES.
- E. Field quality-control reports.
- F. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For built-up roofing to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A qualified manufacturer that is UL listed or FM Global approved for built-up roofing identical to that used for this Project.
- B. **Installer Qualifications:** A qualified firm that is approved, authorized, or licensed by built-up roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

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

1.10 FIELD CONDITIONS

- A. **Weather Limitations:** Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

- A. **Special Warranty:** Manufacturer agrees to repair or replace components of built-up roofing that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes built-up roofing membrane, base flashings, roof insulation, fasteners, cover boards, substrate board, roofing accessories, roof pavers, and other components of built-up roofing.
 - 2. **Warranty Period:** 15 years from date of Substantial Completion.
- B. **Special Project Warranty:** Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of built-up roofing such as built-up roofing membrane, base flashing, roof insulation, fasteners,

cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Barrett Company.
 2. Building Products of Canada Corp.
 3. CertainTeed Corporation.
 4. Ecology Commercial and Industrial Roofing Systems.
 5. Fields Company, LLC.
 6. Firestone Building Products.
 7. GAF Materials Corporation.
 8. IKO.
 9. Johns Manville.
 10. Malarkey Roofing Company.
 11. Tamko Building Products, Inc.
 12. Tremco Incorporated.
- B. Source Limitations: Obtain components including roof insulation, and fasteners for built-up roofing from same manufacturer as built-up roofing or manufacturer approved by built-up roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed built-up roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Built-up roofing and base flashings shall remain watertight.
 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D4272.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by built-up roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Tested by a qualified testing agency to resist the following uplift pressures in compliance with code requirements.

- D. FM Global Listing: Built-up roofing, base flashings, and component materials shall comply with requirements in FM Global 4450 or FM Global 4470 as part of a built-up roofing system, and shall be listed in FM Global's "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Global markings.
 - 1. Fire/Windstorm Classification: Class 1A-75.
 - 2. Hail-Resistance Rating: MH.
- E. Solar Reflectance Index: Not less than 78 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.
- F. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- G. Energy Performance: Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.
- H. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- I. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.

2.3 ROOFING MEMBRANE SHEET MATERIALS

- A. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft.
- B. Base Sheet: ASTM D 4601, Type II, SBS-modified asphalt-impregnated and -coated sheet, with glass-fiber-reinforcing mat, dusted with fine mineral surfacing on both sides.
 - 1. Weight: 40 lb/100 sq. ft., minimum.
- C. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
- D. Base Sheet: ASTM D 4897/D 4897M, Type II, venting, nonperforated, heavyweight, asphalt-impregnated and -coated, glass-fiber base sheet with coarse granule surfacing or embossed venting channels on bottom surface.
- E. Base Sheet: ASTM D 2626, asphalt-saturated and -coated organic felt, dusted with fine mineral surfacing on both sides.
- F. Ply Sheet: ASTM D 2178, Type VI, asphalt-impregnated, glass-fiber felt.
- G. Cap Sheet: ASTM D 3909, asphalt-impregnated and -coated, glass-fiber cap sheet, with white coarse mineral-granule top surfacing and fine mineral surfacing on bottom surface.

2.4 BASE FLASHING SHEET MATERIALS

- A. Backer Sheet: ASTM D 2178, Type VI, asphalt-impregnated, glass-fiber felt.
- B. Backer Sheet: ASTM D 4601, Type II, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
- C. Backer Sheet: ASTM D 2626, asphalt-saturated and -coated organic felt, dusted with fine mineral surfacing on both sides.
- D. Granule-Surfaced Flashing Sheet: ASTM D 6163, Grade G, Type I or II, glass-fiber-reinforced, SBS-modified asphalt sheet; granule-surfaced base flashing; suitable for application method specified, and as follows:
 - 1. Granule Color: White.
- E. Metal-Foil-Surfaced Flashing Sheet: ASTM D 6298, glass-fiber-reinforced, SBS-modified asphalt sheet; metal-foil surfaced; suitable for application method specified, and as follows:
 - 1. Foil Surfacing: Aluminum.
- F. Smooth-Surfaced Flashing Sheet: ASTM D 6223/D 6223M, Grade S, Type I or II, composite polyester-reinforced and glass-fiber-reinforced, APP-modified asphalt sheet; smooth surfaced; suitable for application method specified.
- G. Granule-Surfaced Flashing Sheet: ASTM D 6223/D 6223M, Grade G, Type I or II, composite polyester-reinforced and glass-fiber-reinforced, APP-modified asphalt sheet; granule surfaced; suitable for application method specified, and as follows:
 - 1. Granule Color: White.
- H. Glass-Fiber Fabric: Woven glass-fiber cloth, treated with asphalt, complying with ASTM D 1668, Type I.

2.5 ASPHALT MATERIALS

- A. Asphalt Primer: ASTM D 41/D 41M.
- B. Roofing Asphalt: ASTM D 312, Type III or IV as recommended by built-up roofing manufacturer for application.
- C. Roofing Asphalt: ASTM D 6152, SEBS modified.

2.6 AUXILIARY BUILT-UP ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with built-up roofing.
 - 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content:
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.
 - d. Fiberglass Adhesives: 80 g/L.
 - e. Contact Adhesives: 80 g/L.
 - f. Other Adhesives: 250 g/L.
 - g. Nonmembrane Roof Sealants: 300 g/L.
 - h. Sealant Primers for Nonporous Substrates: 250 g/L.
 - i. Sealant Primers for Porous Substrates: 775 g/L.
 3. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- B. Cold-Applied Adhesive: Roofing manufacturer's standard asphalt-based, one- or two-part, asbestos-free, cold-applied adhesive specially formulated for compatibility and use with built-up base flashings.
- C. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing manufacturer for application.
- D. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.
- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening built-up roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing manufacturer.
- F. Aggregate Surfacing: ASTM D 1863, No. 6 or No. 67, clean, dry, opaque, water-worn gravel or crushed stone, free of sharp edges.
- G. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.7 SUBSTRATE BOARDS

- A. Substrate Board: ASTM C 1396/C 1396M, Type X gypsum board, 5/8 inch thick.
- B. Substrate Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corporation; GlasRoc Sheathing.
 - b. Georgia-Pacific Corporation; Dens Deck.

- c. National Gypsum Company; Gold Bond eXP Extended Exposure Sheathing.
 - d. Temple-Inland, Inc; GreenGlass Exterior Sheathing.
 - e. USG Corporation; Securock Glass Mat Roof Board.
- C. Substrate Board: ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water-resistant gypsum substrate, 3/8 inch thick.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. USG Corporation; Securock Gypsum-Fiber Roof Board.
- D. Substrate Board: ASTM C 728, perlite board, 1 inch thick, seal coated.
- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening substrate board to roof deck.

2.8 VAPOR RETARDER

- A. Polyethylene Film: ASTM D 4397, 6 mils thick, minimum, with maximum permeance rating of 0.13 perm.
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - 2. Adhesive: Manufacturer's standard lap adhesive, FM Global approved for vapor-retarder application.
- B. Laminated Sheet: Polyethylene laminate, two layers, reinforced with cord grid, with maximum permeance rating of 0.06 perm.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Reef Industries, Inc.
 - 3. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
- C. Self-Adhering Sheet Vapor Retarder: ASTM D 1970, polyethylene film laminated to layer of rubberized asphalt adhesive, minimum 40-mil- total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.
- D. Self-Adhering Sheet Vapor Retarder: Polyethylene film laminated to layer of butyl rubber adhesive, minimum 30-mil- total thickness; maximum permeance rating of 0.1 perm; cold applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.
- E. Glass-Fiber Felts: ASTM D 2178, Type IV, asphalt impregnated.

2.9 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Global-approved roof insulation.
- B. Extruded-Polystyrene Board Insulation: ASTM C 578, [Type IV, 1.6-lb/cu. ft. minimum density, square edged.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. DiversiFoam Products.
 - b. Dow Chemical Company (The).
 - c. Owens Corning.
 - d. Pactiv Corporation.
- C. Molded-Polystyrene Board Insulation: ASTM C 578 Type VIII, 1.15-lb/cu. ft. minimum density.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Carlisle SynTec Incorporated.
 - b. DiversiFoam Products.
 - c. Dyplast Products.
- D. Composite Molded-Polystyrene Board Insulation: ASTM C 578, Type VIII, 1.15-lb/cu. ft. minimum density, with factory-applied facings, as follows:
 - 1. Facer: ASTM C 208, Type II, Grade 2, cellulosic-fiber insulation board, asphalt coated, 1/2 inch (13 mm) thick.
 - 2. Facer: DOC PS 2, Exposure 1, oriented strand board, 7/16 inch (11 mm) thick.
- E. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 3, felt or glass-fiber mat facer on both major surfaces.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Atlas Roofing Corporation.
 - b. Carlisle SynTec Incorporated.
 - c. Dyplast Products.
 - d. Firestone Building Products.
 - e. GAF Materials Corporation.

- f. Hunter Panels.
 - g. Insulfoam LLC; a Carlisle company.
 - h. Johns Manville.
 - i. Rmax, Inc.
- F. Composite Polyisocyanurate Board Insulation: ASTM C 1289, with factory-applied facing board on one major surface, as indicated below by type, and felt or glass-fiber mat facer on the other surface.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Atlas Roofing Corporation.
 - b. Firestone Building Products.
 - c. GAF Materials Corporation.
 - d. Homasote Company.
 - e. Hunter Panels.
 - f. Insulfoam LLC; a Carlisle company.
 - g. Johns Manville.
 - 3. Type IV, cellulosic-fiber-insulating-board facer, Grade 2, 1/2 inch thick.
 - 4. Type V, oriented strand board facer, 7/16 inch thick.
 - 5. Type VII, glass mat faced gypsum board facer, 1/4 inch thick.
- G. Perlite Board Insulation: ASTM C 728, rigid, mineral-aggregate thermal insulation board composed of expanded perlite, cellulosic fibers, binders, and waterproofing agents with top surface seal coated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. GAF Materials Corporation.
 - b. Johns Manville.
- H. Cellulosic-Fiber Board Insulation: ASTM C 208, Type II, Grade 2, fibrous-felted, rigid insulation boards of wood fiber or other cellulosic-fiber and water-resistant binders, asphalt impregnated, chemically treated for deterioration.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. GAF Materials Corporation.
 - b. Georgia-Pacific.
 - c. Homasote Company.
 - d. Huebert Fiberboard Inc.

e. Temple-Inland, Inc.

- I. Cellular-Glass Board Insulation: ASTM C 552, Type IV, rigid, cellular-glass thermal board insulation faced with manufacturer's standard kraft-paper sheets.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, comparable product by one of the following:
 - a. Pittsburgh Corning Corporation.
- J. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of [1/4 inch per 12 inches unless otherwise indicated.
- K. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.10 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with built-up roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation to substrate and acceptable to roofing manufacturer.
- C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
 - 1. Modified asphaltic, asbestos-free, cold-applied adhesive.
 - 2. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
 - 3. Full-spread spray-applied, low-rise, two-component urethane adhesive.
- D. Insulation Cant Strips: ASTM C 728, perlite insulation board.
- E. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- F. Wood Nailer Strips: Comply with requirements in Section 061000 "Rough Carpentry."
- G. Tapered Edge Strips: ASTM C 728, perlite insulation board.
- H. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- I. Cover Board: ASTM C 208, Type II, Grade 2, cellulosic-fiber insulation board, 1/2 inch thick.
- J. Cover Board: DOC PS 2, Exposure 1, oriented strand board, 7/16 inch thick.
- K. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch thick.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corporation; GlasRoc Sheathing]
 - b. Georgia-Pacific Corporation; Dens Deck, Dens Deck DuraGuard or Dens Deck Prime.
 - c. National Gypsum Company; Gold Bond eXP Extended Exposure Sheathing.
 - d. Temple-Inland, Inc; GreenGlass Exterior Sheathing.
 - e. USG Corporation; Securock Glass Mat Roof Board.

L. Cover Board: ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water-resistant gypsum substrate, 3/8 inch thick.

1. Products: Subject to compliance with requirements, provide the following:
 - a. USG Corporation; Securock Gypsum-Fiber Roof Board.

M. Substrate Joint Tape: 6- or 8-inch- wide, coated, glass fiber.

2.11 COATING MATERIALS

- A. Roof Coating: ASTM D 1227, Type II, Class 1, mineral-colloid-emulsified, fibered asphalt emulsion, asbestos free.
- B. Roof Coating: ASTM D 1227, Type III, Class 1, mineral-colloid-emulsified asphalt emulsion, nonfibered.
- C. Roof Coating: ASTM D 2824, Type I, nonfibered aluminum-pigmented asphaltic coating.
- D. Roof Coating: Acrylic elastomer emulsion coating, formulated for use on bituminous roof surfaces and complying with ASTM D 6083.

1. Color: White.

2.12 WALKWAYS

- A. Walkway Pads: Mineral-granule-surfaced, reinforced asphaltic composition, slip-resisting pads, manufactured as a traffic pad for foot traffic and acceptable to roofing manufacturer, 3/8 inch thick, minimum.
 1. Pad Size: to match existing.
- B. Walkway Cap-Sheet Strips: ASTM D 6164/D 6164, Grade G, Type I or II, polyester-reinforced, SBS-modified asphalt sheet; granule surfaced; suitable for application method specified, and as follows:
 1. Granule Color: White.
- C. Roof Pavers: Heavyweight, hydraulically pressed, concrete units, square edged, factory cast for use as roof pavers; absorption not greater than 5 percent, ASTM C 140; no breakage and

maximum 1 percent mass loss when tested for freeze-thaw resistance, ASTM C 67; and as follows:

1. Size: 24 by 24 inches. Manufacture pavers to dimensional tolerances of plus or minus 1/16 inch in length, height, and thickness.
2. Compressive Strength: 7500 psi, minimum; ASTM C 140.
3. Colors and Textures: As indicated by manufacturer's designations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
 4. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane relative to adjoining deck.
 5. Verify that minimum concrete drying period recommended by roofing manufacturer has passed.
 6. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - a. Test for moisture by pouring 1 pint of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with Work of this Section if test sample foams or can be easily and cleanly stripped after cooling.
 7. Verify that concrete curing compounds that impair adhesion of roofing components to roof deck have been removed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Prime surface of concrete deck with asphalt primer at a rate of 3/4 gal./100 sq. ft. and allow primer to dry.

- D. Install insulation strips in ribs of acoustical roof decks according to acoustical roof deck manufacturer's written instructions.

3.3 INSTALLATION, GENERAL

- A. Comply with built-up roofing manufacturer's written instructions.
- B. Asphalt Heating: Heat asphalt to its equiviscous temperature, measured at the mop cart or mechanical spreader immediately before application. Circulate asphalt during heating. Do not raise asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed asphalt manufacturer's recommended temperature limits during asphalt heating. Do not heat asphalt within 25 deg F of flash point. Discard asphalt maintained at a temperature exceeding finished blowing temperature for more than 4 hours.
 - 1. Apply hot roofing asphalt within plus or minus 25 deg F of equiviscous temperature.
- C. Asphalt Heating: Heat and apply SEBS-modified roofing asphalt according to roofing manufacturer's written instructions.
- D. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging built-up roofing components or adjacent building construction.

3.4 SUBSTRATE BOARD INSTALLATION

- A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.
 - 1. Fasten substrate board to top flanges of steel deck according to recommendations in FM Global's "RoofNav" and FM Global Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification.
 - 2. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to built-up roofing manufacturer's written instructions.

3.5 VAPOR-RETARDER INSTALLATION

- A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively. Continuously seal side and end laps with adhesive.
- B. Laminate Sheet: Loosely lay laminate-sheet vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively. Continuously seal side and end laps with tape.
- C. Self-Adhering-Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering-sheet vapor retarder over area to receive vapor retarder, side and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.

- D. Built-up Vapor Retarder: Install two glass-fiber felt plies lapping each felt 19 inches over preceding felt. Embed each felt in a solid mopping of hot roofing asphalt. Glaze coat completed surface with hot roofing asphalt.
- E. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into built-up roofing.

3.6 INSULATION INSTALLATION

- A. Install one lapped base-sheet course and mechanically fasten to substrate according to built-up roofing manufacturer's written instructions.
- B. Nailer Strips: Mechanically fasten 4-inch nominal- width wood nailer strips of same thickness as insulation perpendicular to sloped roof deck at the following spacing to match existing.
- C. Insulation Cant Strips: Install and secure preformed 45-degree insulation cant strips at junctures of built-up roofing with vertical surfaces or angle changes greater than 45 degrees.
- D. Install tapered insulation under area of roofing to conform to slopes indicated.
- E. Install insulation with long joints of insulation in a continuous straight line, with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- F. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - 1. Where installing composite and noncomposite board insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
- G. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- H. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- I. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Prime surface of concrete deck with asphalt primer at rate of 3/4 gal./100 sq. ft. and allow primer to dry.
 - 2. Set each layer of insulation in a solid mopping of hot roofing asphalt.
 - 3. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
 - 4. Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

- J. Mechanically Fastened Insulation: Install each layer of insulation and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.
- K. Mechanically Fastened and Adhered Insulation: Install first layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten first layer of insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten first layer of insulation to resist uplift pressure at corners, perimeter, and field of roof.
 - 3. Set each subsequent layer of insulation in a solid mopping of hot roofing asphalt.
 - 4. Set each subsequent layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
 - 5. Set each subsequent layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.
- L. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together and fasten to roof deck. Tape joints if required by roofing manufacturer.
 - 1. Fasten cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
 - 2. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.
 - 3. Apply hot roofing asphalt to underside and immediately bond cover board to substrate.

3.7 BUILT-UP ROOFING INSTALLATION, GENERAL

- A. Install roofing according to roofing manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
- B. Install roofing according to roofing manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing" and as follows:
- C. Start installation of built-up roofing in presence of manufacturer's technical personnel.
- D. Where roof slope exceeds 1/2 inch per 12 inches, install built-up roofing sheets parallel with slope.
 - 1. Backnail built-up roofing sheets to nailer strips according to roofing manufacturer's written instructions.

- E. Coordinate installation of roofing so insulation and other components of built-up roofing not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed built-up roofing sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - 3. Remove and discard temporary seals before beginning work on adjoining roofing.

3.8 ROOFING MEMBRANE INSTALLATION

- A. Loosely lay one course of sheathing paper, lapping edges and ends a minimum of 2 inches and 6 inches, respectively.
- B. Install lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:
 - 1. Mechanically fasten to substrate.
 - 2. Spot or strip mop to substrate with hot roofing asphalt.
 - 3. Adhere to substrate in a solid mopping of hot roofing asphalt.
- C. Install three ply sheets starting at low point of roofing. Align ply sheets without stretching. Shingle side laps of ply sheets uniformly to achieve required number of plies throughout thickness of roofing membrane. Shingle in direction to shed water. Extend ply sheets over and terminate beyond cants.
 - 1. Embed each ply sheet in a solid mopping of hot roofing asphalt applied at rate required by roofing manufacturer, to form a uniform membrane without ply sheets touching.
- D. Cap Sheet: Install lapped granulated cap sheet starting at low point of roofing. Offset laps from laps of preceding ply sheets, and align cap sheet without stretching. Lap in direction to shed water. Extend cap sheet over and terminate beyond cants.
 - 1. Embed cap sheet in a solid mopping of hot roofing asphalt applied at rate required by built-up roofing manufacturer.
- E. Aggregate Surfacing: After installing and testing roofing, base flashing, and stripping, promptly apply flood coat to roof surface with 60 lb/100 sq. ft. of hot roofing asphalt. While flood coat is hot and fluid, cast the following average weight of aggregate in a uniform course:
 - 1. Aggregate Weight: to match existing.
 - 2. If aggregate surfacing is delayed, promptly apply glaze coat of hot roofing asphalt at a rate of 10 lb/100 sq. ft.
- F. Glaze coat roofing surface with hot roofing asphalt applied at a rate of 10 to 15 lb/100 sq. ft.

3.9 FLASHING AND STRIPPING INSTALLATION

- A. Install base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to built-up roofing manufacturer's written instructions and as follows:
 - 1. Prime substrates with asphalt primer if required by built-up roofing manufacturer.
 - 2. Backer-Sheet Application: Mechanically fasten backer sheet to walls or parapets. Adhere backer sheet over built-up roofing at cants in [a solid mopping of hot roofing asphalt.
 - 3. Backer-Sheet Application: Adhere backer sheet to substrate in a solid mopping of hot roofing asphalt.
 - 4. Flashing-Sheet Application: Adhere flashing sheet to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F. Apply hot roofing asphalt to back of flashing sheet if recommended by roofing manufacturer.
 - 5. Flashing-Sheet Application: Adhere flashing sheet to substrate in cold-applied adhesive at rate required by roofing manufacturer.
 - 6. Flashing-Sheet Application: Adhere flashing sheet to substrate in asphalt roofing cement at rate required by roofing manufacturer.
 - 7. Flashing-Sheet Application: Torch apply flashing sheet to substrate.
- B. Extend base flashing up walls or parapets a minimum of 8 inches above built-up roofing and 4 inches onto field of built-up roofing.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
 - 1. Seal top termination of base flashing with a strip of glass-fiber fabric set in asphalt roofing cement.
- D. Install stripping according to roofing manufacturer's written instructions, where metal flanges and edgings are set on built-up roofing.
 - 1. Flashing-Sheet Stripping: Install flashing-sheet stripping in a continuous coating of asphalt roofing cement or in a solid mopping of hot roofing asphalt applied at not less than 425 deg F, and extend onto roofing membrane.
 - 2. Flashing-Sheet Stripping: Install flashing-sheet stripping by heat welding and extend onto roofing membrane.
 - 3. Built-up Stripping: Install stripping of not fewer than two roofing ply sheets, setting each ply in a continuous coating of asphalt roofing cement or in a solid mopping of hot roofing asphalt, and extend onto roofing membrane 4 inches and 6 inches, respectively.
- E. Roof Drains: Set 30-by-30-inch metal flashing in bed of asphalt roofing cement on completed built-up roofing. Cover metal flashing with built-up roofing cap-sheet stripping, and extend a minimum of 6 inches beyond edge of metal flashing onto field of built-up roofing. Clamp built-up roofing, metal flashing, and stripping into roof-drain clamping ring.
 - 1. Install stripping according to roofing manufacturer's written instructions.

3.10 COATING INSTALLATION

- A. Apply coating to built-up roofing and base flashings according to manufacturer's written instructions, by spray, roller, or other suitable application method to provide a dry film thickness of not less than 20 mils.

3.11 WALKWAY INSTALLATION

- A. Walkway Pads: Install walkway pads, using units of size indicated or, if not indicated, of manufacturer's standard size, according to walkway pad manufacturer's written instructions.
 - 1. Set walkway pads in additional pour coat of hot roofing asphalt after sweeping away loose aggregate surfacing.
- B. Walkway Cap-Sheet Strips: Install walkway cap-sheet strips, approximately 36 inches wide and in lengths not exceeding 10 feet, leaving a space of 6 inches between strips, over built-up roofing. Adhere in hot roofing asphalt.
- C. Roof-Paver Walkways: Install walkway roof pavers according to roofing manufacturer's written instructions in locations indicated, to form walkways. Leave 3 inches of space between adjacent roof pavers.

3.12 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.
 - 1. Electric Field Vector Mapping (EFVM): Testing agency shall survey entire roof area for potential leaks using electric field vector mapping (EFVM).
- B. Test Cuts: Remove test specimens to evaluate problems observed during quality-assurance inspections of built-up roofing as follows:
 - 1. Determine approximate quantities of components within built-up roofing according to ASTM D 3617.
 - 2. Examine test specimens for interply voids according to ASTM D 3617 and to comply with criteria established in Appendix 3 of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
 - 3. Repair areas where test cuts were made according to roofing manufacturer's written instructions.
- C. Repair or remove and replace components of built-up roofing where test results or inspections indicate that they do not comply with specified requirements.
 - 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.13 PROTECTING AND CLEANING

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

3.14 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: <Insert name of Owner>.
 - 2. Address: <Insert address>.
 - 3. Building Name/Type: <Insert information>.
 - 4. Address: <Insert address>.
 - 5. Area of Work: <Insert information>.
 - 6. Acceptance Date: _____.
 - 7. Warranty Period: <Insert time>.
 - 8. Expiration Date: _____.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
 - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding <Insert mph>;
 - c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and

- g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075113

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed steep-slope roof sheet metal fabrications.
 - 4. Formed equipment support flashing.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 077200 "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Chualar Elementary School, 24285 Lincoln Street, Chualar, CA 93925
 - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.

1. Include plans, elevations, sections, and attachment details.
2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
3. Include identification of material, thickness, weight, and finish for each item and location in Project.
4. Include details for forming, including profiles, shapes, seams, and dimensions.
5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
6. Include details of termination points and assemblies.
7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
8. Include details of roof-penetration flashing.
9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counterflashings as applicable.
10. Include details of special conditions.
11. Include details of connections to adjoining work.
12. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.

D. Samples for Verification: For each type of exposed finish.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Product Certificates: For each type of coping and roof edge flashing that is SPRI ES-1 tested and FM Approvals approved.

C. Product Test Reports: For each product, for tests performed by a qualified testing agency.

- D. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 - 1. For copings and roof edge flashings that are SPRI ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof edge and eave, including fascia, fascia trim, apron flashing, approximately 10 feet long, including supporting construction cleats, seams, attachments, underlayment, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.10 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

- c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
- 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. FM Approvals Listing: Manufacture and install copings roof edge flashings that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, Class 1-75. Identify materials with name of fabricator and design approved by FM Approvals.
- D. SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting design pressures appropriate for the location:
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209 alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required; with smooth surface.
 - 1. As-Milled Finish: One-side bright mill.
 - 2. Alclad Finish: Metallurgically bonded surfacing alloy on both sides, forming aluminum sheet with reflective luster.
 - 3. Factory Prime Coating: Where painting after installation is required, pretreat metal with white or light-colored, factory-applied, baked-on epoxy primer coat; minimum dry film thickness of 0.2 mil.
 - 4. Clear Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
 - 5. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

- a. Color: to match existing.
 - b. Color Range: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- 6. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Three-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - c. Mica Fluoropolymer: AAMA 620. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - d. Metallic Fluoropolymer: AAMA 620. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - e. FEVE Fluoropolymer: AAMA 620. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - f. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
- 7. Color: to match existing.
- 8. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead soft, fully annealed; with smooth surface.
 - 1. Finish: 2B (bright, cold rolled).
- D. Zinc-Tin Alloy-Coated Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, dead-soft, fully annealed, stainless-steel sheet of minimum uncoated thickness indicated; coated on both sides with zinc-tin alloy (50 percent zinc, 50 percent tin), with factory-applied gray preweathering.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Follansbee Steel; TCS II.

- E. **Metallic-Coated Steel Sheet:** Provide [zinc-coated (galvanized) steel sheet according to ASTM A 653/A 653M, G90 coating designation, Grade 40 prepainted by coil-coating process to comply with ASTM A 755/A 755M.
1. Surface: Smooth, flat.
 2. Exposed Coil-Coated Finish:
 - a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - c. Mica Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish with suspended mica flakes containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - d. Metallic Fluoropolymer: AAMA 621. Three-coat fluoropolymer finish with suspended metallic flakes containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - e. FEVE Fluoropolymer: AAMA 621. Two-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - f. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with dry film thickness of not less than 0.2 mil for primer and 0.8 mil for topcoat.
 3. Color: to match existing.
 4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
- F. **Zinc Sheet:** 99.995 percent electrolytic high-grade zinc with alloy additives of copper (0.08 to 0.20 percent), titanium (0.07 to 0.12 percent), and aluminum (0.015 percent; with manufacturer's standard factory-applied, flexible, protective back coating.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Contrarian Metal Resources; Alloy 710 Zinc.
 - b. Jarden Zinc Products; Solid Zinc Strip.
 - c. Rheinzink America Inc.; RHEINZINK.
 - d. Umicore Building Products USA, Inc.; VM ZINC series.
 2. Finish: Bright rolled.

3. Material in "Copper-Clad Stainless-Steel Sheet" Paragraph below is not listed as a flashing or metal roof-covering material in the IBC, "The NRCA Roofing Manual," or SMACNA's "Architectural Sheet Metal Manual." Before retaining, verify material availability at Project location, its thickness and assembly requirements, and whether it is acceptable to authorities having jurisdiction.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226/D 226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Synthetic Underlayment: Laminated or reinforced, woven polyethylene or polypropylene, synthetic roofing underlayment; bitumen free; slip resistant; suitable for high temperatures over 220 deg F; and complying with physical requirements of ASTM D 226/D 226M for Type I and Type II felts.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Atlas Roofing Corporation; Summit.
 - b. Engineered Coated Products; Nova-Seal II.
 - c. Kirsch Building Products, LLC; Sharkskin Comp
 - d. SDP Advanced Polymer Products Inc; Palisade.
- C. Self-Adhering, High-Temperature Sheet: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Carlisle Residential, a division of Carlisle Construction Materials; WIP 300HT.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.-Conn.; Grace Ice and Water Shield HT
 - c. Henry Company; Blueskin PE200 HT.
 - d. Kirsch Building Products, LLC; Sharkskin Ultra SA.
 - e. Metal-Fab Manufacturing, LLC; MetShield.
 - f. Owens Corning; WeatherLock Specialty Tile & Metal Underlayment.
 - g. Polyguard Products, Inc.; Deck Guard HT.
 - h. Protecto Wrap Company; Protecto Jiffy Seal Ice & Water Guard HT.
 - i. SDP Advanced Polymer Products Inc; Palisade SA-HT.
 2. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F or higher.
 3. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F or lower.
- D. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. minimum.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
 - 4. Fasteners for Zinc-Tin Alloy-Coated Stainless-Steel Sheet: Series 300 stainless steel.
 - 5. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.
 - 6. Fasteners for Zinc Sheet: Series 300 stainless steel or hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Solder:
 - 1. For Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
 - 2. For Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin, with maximum lead content of 0.2 percent, as recommended by sheet metal manufacturer.
 - 3. For Zinc-Coated (Galvanized) Steel: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
 - 4. For Zinc: ASTM B 32, 40 percent tin and 60 percent lead with low antimony, as recommended by zinc manufacturer.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane, polysulfide or silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- I. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 MANUFACTURED SHEET METAL FLASHING AND TRIM

- A. Through-Wall, Ribbed, Sheet Metal Flashing: Manufacture through-wall sheet metal flashing for embedment in masonry, with ribs at 3-inch intervals along length of flashing to provide integral mortar bond. Manufacture through-wall flashing with snaplock receiver on exterior face to receive counterflashing.
 - 1. Stainless Steel: 0.016 inch thick.
 - a. Products: Subject to compliance with requirements, provide one of the following:
 - 1) Cheney Flashing Company; Cheney Flashing.
 - 2) Hohmann & Barnard, Inc.; STF Sawtooth Flashing.
 - 3) Keystone Flashing Company, Inc.; Keystone Three-Way Interlocking Thruwall Flashing.
 - 4) Sandell Manufacturing; Pre-Formed Metal Flashing.
- B. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Cheney Flashing Company.
 - b. Fry Reglet Corporation.
 - c. Heckmann Building Products, Inc.
 - d. Hickman, W. P. Company.
 - e. Hohmann & Barnard, Inc.
 - f. Keystone Flashing Company, Inc.
 - g. National Sheet Metal Systems, Inc.
 - h. Sandell Manufacturing.
 - 2. Material: Stainless steel, 0.019, Aluminum, 0.024 inch thick, Galvanized steel, 0.022 inch thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.

5. Concrete Type: Provide temporary closure tape to keep reglet free of concrete materials, special fasteners for attaching reglet to concrete forms, and guides to ensure alignment of reglet section ends.
6. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
7. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
8. Finish: Mill.

2.6 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
 2. Use lapped expansion joints only where indicated on Drawings.
- E. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

- G. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.
- H. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- I. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.
- J. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints where necessary for strength.
- K. Do not use graphite pencils to mark metal surfaces.

2.7 ROOF-DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter brackets and flat-stock gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited sheet metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters.
 - 1. Gutter Profile: Match existing.
 - 2. Expansion Joints: Butt type.
 - 3. Gutters with Girth 16 to 20 Inches: Fabricate from the following materials:
 - a. Aluminum: 0.040 inch thick.
 - b. Stainless Steel: 0.019 inch thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 - d. Zinc-Tin Alloy-Coated Copper: 16 oz./sq. ft..
 - e. Galvanized Steel: 0.028 inch thick.
 - f. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 - g. Zinc: 0.039 inch thick.
 - 4. Gutters with Girth 21 to 25 Inches Fabricate from the following materials:
 - a. Aluminum: 0.050 inch thick.
 - b. Stainless Steel: 0.025 inch thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.024 inch thick.
 - d. Galvanized Steel: 0.034 inch thick.
 - e. Aluminum-Zinc Alloy-Coated Steel: 0.034 inch thick.
 - f. Zinc: 0.048 inch thick.
 - 5. Gutters with Girth 26 to 30 Inches: Fabricate from the following materials:
 - a. Aluminum: 0.063 inch thick.
 - b. Stainless Steel: 0.031 inch thick.
 - c. Galvanized Steel: 0.040 inch thick.
 - d. Aluminum-Zinc Alloy-Coated Steel: 0.040 inch thick.

6. Gutters with Girth 31 to 35 Inches. Fabricate from the following materials:
 - a. Stainless Steel: 0.038 inch thick.
 - b. Galvanized Steel: 0.052 inch thick.
 - c. Aluminum-Zinc Alloy-Coated Steel: 0.052 inch thick.
- B. Built-in Gutters: Fabricate to cross section required, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required. Fabricate in minimum 96-inch- long sections. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
 1. Fabricate gutters with built-in expansion joints and gutter-end expansion joints at walls.
- C. Downspouts: Fabricate downspouts to dimensions matching existing, complete with mitered elbows. Furnish with metal hangers from same material as downspouts and anchors.
 1. Fabricated Hanger Style: to match existing.
 2. Manufactured Hanger Style: to match existing
 3. Hanger Style: to match existing.
 4. Fabricate from the following materials:
 - a. Aluminum: 0.024 inch thick.
 - b. Stainless Steel: 0.016 inch thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.015 inch thick.
 - d. Galvanized Steel: 0.022 inchthick.
 - e. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.
 - f. Zinc: 0.032 inch thick.
- D. Parapet Scuppers: Fabricate scuppers to dimensions required to match existing, with closure flange trim to exterior, 4-inch- wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof. Fabricate from the following materials:
 1. Aluminum: 0.032 inch thick.
 2. Stainless Steel: 0.019 inch thick.
 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 4. Galvanized Steel: 0.028 inch thick.
 5. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 6. Zinc: 0.032 inch thick.

2.8 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop) and Fascia Cap: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long sections. Furnish with 6-inch- wide, joint cover plates.
 1. Joint Style: Butted with expansion space and 6-inch- wide, concealed backup plate.
 2. Fabricate with scuppers spaced 10 feet apart, to dimensions required with 4-inch- wide flanges and base extending 4 inches beyond cant or tapered strip into field of roof. Fasten gravel guard angles to base of scupper.
 3. Fabricate from the Following Materials:
 - a. Aluminum: 0.050 inch thick.
 - b. Stainless Steel: 0.019 inch thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 - d. Galvanized Steel: 0.028 inch thick.

- e. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 - f. Zinc: 0.048 inch thick.
- B. Copings: Fabricate in minimum 96-inch- long, but not exceeding 12-foot- long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, solder or weld watertight.
 - 1. Coping Profile: to match existing.
 - 2. Joint Style: Butted with expansion space and 6-inch wide, concealed backup plate.
 - 3. Fabricate from the Following Materials:
 - a. Aluminum: 0.050 inch thick.
 - b. Stainless Steel: 0.025 inchm thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.024 inch thick.
 - d. Galvanized Steel: 0.040 inch thick.
 - e. Aluminum-Zinc Alloy-Coated Steel: 0.040 inch thick.
 - f. Zinc: 0.048 inch thick.
- C. Roof and Roof-to-Wall Transition, Roof-to-Roof Edge-Flashing (Gravel-Stop) Transition, Roof-to-Roof Edge-Flashing (Gravel-Stop) and Fascia-Cap Transition. Expansion-Joint Cover: Fabricate from the following materials:
 - a. Aluminum: 0.050 inch thick.
 - b. Stainless Steel: 0.025 inchm thick.
 - c. Zinc-Tin Alloy-Coated Stainless Steel: 0.024 inch thick.
 - d. Galvanized Steel: 0.040 inch thick.
 - e. Aluminum-Zinc Alloy-Coated Steel: 0.040 inch thick.
 - f. Zinc: 0.048 inch thick.
- D. Base Flashing: Fabricate from the following materials:
 - 1. Aluminum: 0.040 inch thick.
 - 2. Stainless Steel: 0.019 inch thick.
 - 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 - 4. Galvanized Steel: 0.028 inch thick.
 - 5. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 - 6. Zinc: 0.032 inch thick.
- E. Counterflashing: Fabricate from the following materials:
 - 1. Aluminum: 0.032 inch thick.
 - 2. Stainless Steel: 0.019 inch thick.
 - 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 - 4. Galvanized Steel: [0.022 inch thick.
 - 5. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.
 - 6. Zinc: 0.032 inch thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Stainless Steel: 0.019 inch thick.
 - 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 - 3. Galvanized Steel: 0.028 inch thick.
 - 4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 - 5. Zinc: 0.032 inch thick.

- G. Roof-Drain Flashing: Fabricate from the following materials:
1. Stainless Steel: 0.016 inch thick.
 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.015 inch thick.
 3. Copper-Clad Stainless Steel: 0.016 inch thick.

2.9 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
1. Aluminum: 0.032 inch thick.
 2. Stainless Steel: 0.019 inch thick.
 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 4. Galvanized Steel: [0.022 inch thick.
 5. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.
 6. Zinc: 0.032 inch thick.
- B. Valley Flashing: Fabricate from the following materials:
1. Stainless Steel: 0.019 inch thick.
 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 3. Galvanized Steel: 0.028 inch thick.
 4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 5. Zinc: 0.032 inch thick.
- C. Drip Edges: Fabricate from the following materials:
1. Stainless Steel: 0.019 inch thick.
 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 3. Galvanized Steel: 0.028 inch thick.
 4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.
 5. Zinc: 0.032 inch thick.
- D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
1. Aluminum: 0.032 inch thick.
 2. Stainless Steel: 0.016 inch thick.
 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.015 inch thick.
 4. Galvanized Steel: [0.022 inch thick.
 5. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.
 6. Zinc: 0.032 inch thick.
- E. Counterflashing: Fabricate from the following materials:
1. Aluminum: 0.032 inch thick.
 2. Stainless Steel: 0.019 inch thick.
 3. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 4. Galvanized Steel: 0.022 inch thick.
 5. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch thick.
 6. Zinc: 0.032 inch thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:
1. Stainless Steel: 0.019 inch thick.
 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 3. Galvanized Steel: 0.028 inch thick.
 4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.

5. Zinc: 0.032 inch thick.

2.10 MISCELLANEOUS SHEET METAL FABRICATIONS

- A. Equipment Support Flashing: Fabricate from the following materials:
 1. Stainless Steel: 0.019 inch thick.
 2. Zinc-Tin Alloy-Coated Stainless Steel: 0.018 inch thick.
 3. Galvanized Steel: 0.028 inch thick.
 4. Aluminum-Zinc Alloy-Coated Steel: 0.028 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Synthetic Underlayment: Install synthetic underlayment, wrinkle free, according to manufacturers' written instructions, and using adhesive where possible to minimize use of mechanical fasteners under sheet metal.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps and edges with roller. Cover underlayment within 14 days.
- D. Apply slip sheet, wrinkle free, over underlayment before installing sheet metal flashing and trim.

3.3 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners or solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Space cleats not more than 12 inches apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 - 4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
 - 5. Torch cutting of sheet metal flashing and trim is not permitted.
 - 6. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Coat concealed side of uncoated-aluminum stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for

- installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder metallic-coated steel and aluminum sheet.
 2. Do not pre-tin zinc-tin alloy-coated stainless steel and zinc-tin alloy-coated copper.
 3. Do not use torches for soldering.
 4. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 5. Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for stainless steel and acid flux. Promptly remove acid flux residue from metal after tinning and soldering. Comply with solder manufacturer's recommended methods for cleaning and neutralization.
 6. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
 7. Copper-Clad Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for copper-clad stainless steel.
- H. Rivets: Rivet joints in uncoated aluminum or zinc where necessary for strength.

3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof-drainage items to produce complete roof-drainage system according to cited sheet metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
1. Fasten gutter spacers to front and back of gutter.
 2. Anchor and loosely lock back edge of gutter to continuous cleat, eave or apron flashing.
 3. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches
 4. Anchor gutter with gutter brackets or straps spaced not more than 24 inches apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
 5. Anchor gutter with spikes and ferrules spaced not more than 24 inches apart.
 6. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
- C. Built-in Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Slope to downspouts. Provide end closures and seal watertight with sealant.
1. Install underlayment layer in built-in gutter trough and extend to drip edge at eaves and under underlayment on roof sheathing. Lap sides minimum of 2 inches over underlying

- course. Lap ends minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with roofing nails. Install slip sheet over underlayment.
2. Anchor and loosely lock back edge of gutter to continuous cleat, eave or apron flashing.
 3. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 18 inches apart.
 4. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
- D. Downspouts: Join sections with 1-1/2-inch telescoping joints.
1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c.
 2. Provide elbows at base of downspout to direct water away from building.
 3. Connect downspouts to underground drainage system.
- E. Splash Pans: Install where downspouts discharge on low-slope roofs. Set in asphalt roofing cement compatible with the substrate.
- F. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
1. Anchor scupper closure trim flange to exterior wall and solder to scupper.
 2. Loosely lock front edge of scupper with conductor head.
 3. Solder or exterior wall scupper flanges into back of conductor head.
- G. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch below scupper or gutter discharge.
- H. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches in direction of water flow.

3.5 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch centers.
- C. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.
- D. Copings: Anchor to resist uplift and outward forces according to recommendations in cited sheet metal standard unless otherwise indicated.

1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 24-inch centers.
 2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch centers.
- E. Copings: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for specified FM Approvals' listing for required windstorm classification.
- F. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- G. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints minimum of 4 inches. Secure in waterproof manner by means of unless otherwise indicated.
- H. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with butyl sealant and clamp flashing to pipes that penetrate roof.

3.6 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.
- B. Overhead-Piping Safety Pans: Suspend pans from structure above, independent of other overhead items such as equipment, piping, and conduit, unless otherwise indicated on Drawings. Pipe and install drain line to plumbing waste or drainage system.

3.7 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.8 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Copings.
2. Roof-edge flashings.
3. Roof-edge drainage systems.
4. Reglets and counterflashings.

- B. Related Sections:

1. **Section 061000 "Rough Carpentry"** for wood nailers, curbs, and blocking.
2. Section 076200 "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
3. Section 079200 "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. FM Approvals' Listing: Manufacture and install **copings and roof-edge flashings** that are listed in FM Approvals' "RoofNav" and approved for windstorm classification, **Class 1-75**. Identify materials with FM Approvals' markings.
- C. SPRI Wind Design Standard: Manufacture and install **copings and roof-edge flashings** tested according to SPRI ES-1 and capable of resisting the following design pressures:
 1. Design Pressure: to match existing.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): **180 deg F**, material surfaces.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof specialties. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work. Include the following:
 1. Details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 2. Pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 3. Details of termination points and assemblies, including fixed points.
 4. Details of special conditions.
- C. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- D. Samples for Verification: For **copings and roof-edge flashings, roof-edge drainage systems, reglets and counterflashings** made from 12-inch lengths of full-size components including fasteners, cover joints, accessories, and attachments.

1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for **copings and roof-edge flashings**.
- B. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 1. Build mockup of typical roof edge, including **fascia, gutter, and downspout**, approximately **10 feet** long, including supporting construction, seams, attachments, **underlayment**, and accessories.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Preinstallation Conference: Conduct conference at **Project site**.

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects roof specialties including installers of roofing materials and accessories.
2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof specialties installation.

1.9 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: **20** years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 EXPOSED METALS

- A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
1. Surface: **Smooth, flat** finish.
 2. Mill Finish: As manufactured.
 3. Exposed Coil-Coated Finishes: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: AAMA 620. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.

- b. Three-Coat Fluoropolymer: AAMA 620. System consisting of primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent PVDF resin by weight.
 - c. Concealed Surface: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
 - 4. Clear Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
 - 5. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
- B. Aluminum Extrusions: ASTM B 221), alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:
 - 1. Exposed High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: **AAMA 2605**. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
 - b. Three-Coat Fluoropolymer: AAMA 2605. System consisting of primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent PVDF resin by weight.
 - 2. Clear Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.
 - 3. Color Anodic Finish, Coil Coated: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.
- D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation.
 - 1. Surface: **Smooth, flat** finish.
 - 2. Mill-Phosphatized Finish: Manufacturer's standard for field painting.
 - 3. Exposed Coil-Coated Finishes: Prepainted by the coil-coating process to comply with ASTM A 755/A 755M. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: AAMA 621. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
 - b. Three-Coat Fluoropolymer: AAMA 621. System consisting of primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent PVDF resin by weight.

2.2 CONCEALED METALS

- A. Aluminum Sheet: ASTM B 209, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by manufacturer for type of use and structural performance indicated, mill finished.
- C. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304.
- D. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- B. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
 - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F.
 - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F.
 - 3. Products: Subject to compliance with requirements, **provide one of the following**:
 - a. Carlisle Coatings & Waterproofing; CCW WIP 300HT.
 - b. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
 - c. Henry Company; Blueskin PE200 HT.
 - d. Metal-Fab Manufacturing, LLC; MetShield.
 - e. Owens Corning; WeatherLock Metal High Temperature Underlayment.
- C. Polyethylene Sheet: 6-mil- thick polyethylene sheet complying with ASTM D 4397.
- D. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 - 2. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
 - 3. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
 - 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

5. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
- C. Elastomeric Sealant: ASTM C 920, elastomeric **polyurethane** polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- D. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- E. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- F. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.
- G. Solder for Copper: ASTM B 32, **lead-free solder**.

2.5 COPINGS

- A. Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding **12 feet**, concealed anchorage; corner units, end cap units, and concealed splice plates with same finish as coping caps.
 1. Manufacturers: Subject to compliance with requirements, **provide products by one of the following:**
 2. Basis-of-Design Product: Subject to compliance with requirements, provide [comparable product by one of the following:
 - a. Architectural Products Company.
 - b. ATAS International, Inc.
 - c. Castle Metal Products.
 - d. Cheney Flashing Company.
 - e. Hickman Company, W. P.
 - f. Johns Manville.
 - g. Merchant & Evans, Inc.
 - h. Metal-Era, Inc.
 - i. Metal-Fab Manufacturing, LLC.
 - j. MM Systems Corporation.
 - k. National Sheet Metal Systems, Inc.
 - l. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
 - m. Petersen Aluminum Corporation.
 3. Coping-Cap Material: **to match existing.**

2.6 ROOF-EDGE FLASHINGS

- A. Canted Roof-Edge **Fascia and Gravel Stop:** Manufactured, two-piece, roof-edge fascia consisting of **compression-clamped** metal fascia cover in section lengths not exceeding **12 feet** and a continuous formed galvanized-steel sheet cant, 0.028 inch thick, minimum, with extended vertical leg terminating in a drip-edge cleat. Provide matching corner units.

1. Manufacturers: Subject to compliance with requirements, **provide products by one of the following:**
 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Architectural Products Company.
 - b. ATAS International, Inc.
 - c. Castle Metal Products.
 - d. Cheney Flashing Company.
 - e. Hickman Company, W. P.
 - f. Johns Manville.
 - g. Merchant & Evans, Inc.
 - h. Metal-Era, Inc.
 - i. Metal-Fab Manufacturing, LLC.
 - j. MM Systems Corporation.
 - k. National Sheet Metal Systems, Inc.
 - l. Petersen Aluminum Corporation.
 3. Fascia Cover: to match existing.
 4. Corners: to match existing
 5. Splice Plates: to match existing
 6. Special Fabrications: to match existing
 7. Fascia Accessories: to match existing
- B. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding **12 feet** a continuous formed- or extruded-aluminum anchor bar with integral drip-edge cleat to engage fascia cover. Provide matching corner units.
1. Manufacturers: Subject to compliance with requirements, **provide products by one of the following:**
 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Hickman Company, W. P.
 - b. Johns Manville.
 - c. Metal-Era, Inc.
 - d. Metal-Fab Manufacturing, LLC.
 - e. National Sheet Metal Systems, Inc.
 - f. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
 3. Fascia Cover: to match existing.
 4. Corners: to match existing
 5. Splice Plates: to match existing
 6. Special Fabrications: to match existing
 7. Fascia Accessories: **to match existing**

- C. One-Piece Gravel Stops: Manufactured, one-piece, metal gravel stop in section lengths not exceeding **12 feet**, with a horizontal flange and vertical leg and concealed splice plates of same material, finish, and shape as gravel stop. Provide matching corner units.
1. Manufacturers: Subject to compliance with requirements, **provide products by one of the following**:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Architectural Products Company.
 - b. Berger Building Products, Inc.
 - c. Castle Metal Products.
 - d. Cheney Flashing Company.
 - e. Hickman Company, W. P.
 - f. Metal-Era, Inc.
 - g. Metal-Fab Manufacturing, LLC.
 - h. MM Systems Corporation.
 - i. National Sheet Metal Systems, Inc.
 - j. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
 - k. Petersen Aluminum Corporation.
 3. Fabricate from the following exposed metal:
 - a. Formed Aluminum: to match existing
 - b. Extruded Aluminum: to match existing
 - c. Stainless Steel: to match existing.
 - d. Zinc-Coated Steel: to match existing.
- D. Aluminum Finish: **Two-coat fluoropolymer.**
1. Color: **Dark bronze.**
- E. Stainless-Steel Finish: **No. 2B (bright, cold rolled).**
- F. Zinc-Coated Steel Finish: **Two-coat fluoropolymer**
1. Color: **As indicated by manufacturer's designations.**

2.7 ROOF-EDGE DRAINAGE SYSTEMS

- A. Manufacturers: Subject to compliance with requirements, **provide products by one of the following**:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
1. Andreas Renner KG.
 2. Architectural Products Company.
 3. ATAS International, Inc.
 4. Berger Building Products, Inc.
 5. Castle Metal Products.

6. Cheney Flashing Company.
 7. CopperCraft by FABRAL; a Euramax company.
 8. Hickman Company, W. P.
 9. Klauer Manufacturing Company.
 10. Merchant & Evans, Inc.
 11. Metal-Era, Inc.
 12. Metal-Fab Manufacturing, LLC.
 13. MM Systems Corporation.
 14. National Sheet Metal Systems, Inc.
 15. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
- C. Gutters: Manufactured in uniform section lengths not exceeding **12 feet**, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.
1. Fabricate from the following exposed metal:
 - a. Formed Aluminum: to match existing.
 - b. Zinc-Coated Steel: to match existing.
 2. Gutter Profile: to match existing, or SMADCNA "B-Style."
 3. Embossed Surface: to match existing
 4. Corners: Factory mitered and **soldered**.
 5. Gutter Supports: **Gutter brackets** with finish matching the gutters.
- D. Downspouts: **Plain rectangular** complete with **mitered** elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Zinc-Coated Steel: Nominal **0.034-inch** thickness.
- E. Parapet Scuppers: Manufactured with closure flange trim to exterior, 4-inch- wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof.
1. Fabricate from the following exposed metal:
 - a. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
- F. Conductor Heads: Manufactured conductor heads, each with flanged back and stiffened top edge and of dimensions and shape indicated, complete with outlet tube that nests into upper end of downspout, **exterior flange trim, and built-in overflow**.
1. Fabricate from the following exposed metal:
 - a. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
- G. Splash Pans: Fabricate from the following exposed metal:
1. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
- H. Zinc-Coated Steel Finish: **Two-coat fluoropolymer**.
1. Color: **As selected by Architect from manufacturer's full range**.

2.8 REGLETS AND COUNTERFLASHINGS

- A. Manufacturers: Subject to compliance with requirements, **provide products by one of the following:**
- B. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - 1. Castle Metal Products.
 - 2. Cheney Flashing Company.
 - 3. Fry Reglet Corporation.
 - 4. Heckmann Building Products Inc.
 - 5. Hickman Company, W. P.
 - 6. Keystone Flashing Company, Inc.
 - 7. Metal-Era, Inc.
 - 8. Metal-Fab Manufacturing, LLC.
 - 9. MM Systems Corporation.
 - 10. National Sheet Metal Systems, Inc.
- C. Reglets: Manufactured units formed to provide secure interlocking of separate reglet and counterflashing pieces, from the following exposed metal:
 - 1. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
 - 2. Corners: Factory mitered and **soldered**.
 - 3. Surface-Mounted Type: Provide reglets with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
- D. Counterflashings: Manufactured units of heights to overlap top edges of base flashings by 4 inches and in lengths not exceeding **12 feet** designed to snap into **reglets or through-wall-flashing receiver** and compress against base flashings with joints lapped, from the following exposed metal:
 - 1. Zinc-Coated Steel: Nominal **0.028-inch** thickness.
- E. Accessories:
 - 1. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where reglet is provided separate from metal counterflashing.
 - 2. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing lower edge.
- F. Zinc-Coated Steel Finish: **Two-coat fluoropolymer.**
 - 1. Color: **As selected by Architect from manufacturer's full range.**

2.9 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.
- B. Self-Adhering Sheet Underlayment: Install wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water. Overlap edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.
- C. Polyethylene Sheet: Install with adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped and taped joints of not less than 2 inches.
- D. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches.

3.3 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete roof-specialty systems.

1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 3. Install roof specialties to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
 4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of **uncoated aluminum and stainless-steel** roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of **felt underlayment and cover with a slip sheet**.
 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of **12 feet** with no joints within **18 inches** of corners or intersections unless otherwise shown on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate **substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance**.
- E. Seal joints with **butyl** sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for watertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches except reduce pre-tinning where pre-tinned surface would show in completed Work. Tin edges of uncoated copper sheets using solder for copper. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- 3.4 COPING INSTALLATION
- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
 - B. Anchor copings to meet performance requirements.

1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at **manufacturer's required spacing that meets performance requirements.**
2. Interlock face leg drip edge into continuous cleat anchored to substrate at **manufacturer's required spacing that meets performance requirements.** Anchor back leg of coping with screw fasteners and elastomeric washers at **manufacturer's required spacing that meets performance requirements.**

3.5 ROOF-EDGE FLASHING INSTALLATION

- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
- B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

3.6 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION

- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Gutters: Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than **12 inches** apart. Attach ends with rivets and **solder** to make watertight. Slope to downspouts.
 1. Install gutter with expansion joints at locations indicated but not exceeding **50 feet** apart. Install expansion joint caps.
- C. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately **60 inches** o.c.
 1. Provide elbows at base of downspout to direct water away from building.
 2. Connect downspouts to underground drainage system indicated.
- D. Splash Pans: Install where downspouts discharge on **low-slope roofs**. Set in **asphalt roofing cement**.
- E. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
 1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
 2. Loosely lock front edge of scupper with conductor head.
 3. Seal or solder exterior wall scupper flanges into back of conductor head.
- F. Conductor Heads: Anchor securely to wall with elevation of conductor top edge 1 inch below **scupper or gutter** discharge.

3.7 REGLET AND COUNTERFLASHING INSTALLATION

- A. General: Coordinate installation of reglets and counterflashings with installation of base flashings.
- B. Surface-Mounted Reglets: Install reglets to receive flashings where flashing without embedded reglets is indicated on Drawings. Install at height so that inserted counterflashings overlap 4 inches over top edge of base flashings.
- C. Counterflashings: Insert counterflashings into reglets or other indicated receivers; ensure that counterflashings overlap 4 inches over top edge of base flashings. Lap counterflashing joints a minimum of 4 inches and bed with **butyl** sealant. Fit counterflashings tightly to base flashings.

3.8 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100

SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Gravity ventilators.
 - 2. Preformed flashing sleeves.
- B. Related Sections:
 - 1. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.
 - 2. Section 077100 "Roof Specialties" for manufactured fasciae, copings, gravel stops, gutters and downspouts, and counterflashing.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.
- C. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.

1.5 INFORMATIONAL SUBMITTALS

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

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

B. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.7 COORDINATION

- A. Coordinate layout and installation of roof accessories with interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation and mill phosphatized for field painting where indicated.
1. Mill-Phosphatized Finish: Manufacturer's standard for field painting.
 2. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil.

3. Exposed Coil-Coated Finish: Prepainted by the coil-coating process to comply with ASTM A 755/A 755M. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer Finish: AAMA 621. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
 4. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil for topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.
 5. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- B. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, AZ50 coated.
1. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil.
 2. Exposed Coil-Coated Finish: Prepainted by the coil-coating process to comply with ASTM A 755/A 755M. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer Finish: AAMA 621. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
 3. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil for topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.
 4. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- C. Aluminum Sheet: ASTM B 209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
1. Mill Finish: As manufactured.
 2. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil.
 3. Clear Anodic Finish: AA-M12C22A31, Class II, 0.010 mm or thicker.
 4. Color Anodic Finish: AA-M12C22A32/A34, Class II, 0.010 mm or thicker.
 5. Exposed Coil-Coated Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

- a. Two-Coat Fluoropolymer Finish: AAMA 620. System consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
- 6. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
- 7. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester-backer finish consisting of prime coat and wash coat, with a minimum total dry film thickness of 0.5 mil.
- D. Aluminum Extrusions and Tubes: ASTM B 221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used, otherwise mill finished.
- E. Copper Sheet: ASTM B 370, manufacturer's standard temper.
- F. Stainless-Steel Sheet and Shapes: ASTM A 240/A 240M or ASTM A 666, Type 304.
- G. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.
- H. Steel Tube: ASTM A 500, round tube.
- I. Galvanized-Steel Tube: ASTM A 500, round tube, hot-dip galvanized according to ASTM A 123/A 123M.
- J. Steel Pipe: ASTM A 53/A 53M, galvanized.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Acrylic Glazing: ASTM D 4802, thermoformable, monolithic sheet, manufacturer's standard, Type UVA (formulated with UV absorber), Finish 1 (smooth or polished).
- C. Polycarbonate Glazing: Thermoformable, monolithic polycarbonate sheets manufactured by extrusion process, burglar-resistance rated according to UL 972 with an average impact strength of 12 to 16 ft-lbf/in. of width when tested according to ASTM D 256, Method A (Izod).
- D. Cellulosic-Fiber Board Insulation: ASTM C 208, Type II, Grade 1, thickness as indicated.
- E. Glass-Fiber Board Insulation: ASTM C 726, thickness as indicated.
- F. Polyisocyanurate Board Insulation: ASTM C 1289, thickness as indicated.
- G. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1-1/2 inches thick.
- H. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

- I. Underlayment:
 - 1. Felt: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
 - 2. Polyethylene Sheet: 6-mil- (0.15-mm-) thick polyethylene sheet complying with ASTM D 4397.
 - 3. Slip Sheet: Building paper, 3-lb/100 sq. ft. (0.16-kg/sq. m) minimum, rosin sized.
- J. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
 - 1. Fasteners for Zinc-Coated or Aluminum-Zinc Alloy-Coated Steel: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.
 - 2. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
 - 3. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
 - 4. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
- K. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- L. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- M. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.
- N. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.3 GRAVITY VENTILATORS

- A. Low-Profile, Cylindrical-Style Gravity Ventilators: Manufacturer's standard, fabricated as indicated, with manufacturer's standard welded or sealed mechanical joints.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
 - a. Active Ventilation Products, Inc.
 - b. Greenheck Fan Corporation.
 - c. Loren Cook Company.
 - d. Metallic Products Corp.
 - e. Thaler Metal USA Inc.
 - 3. Construction: Integral base flange, vent cylinder, cylinder bird screen, and hood.
 - 4. Dimensions: to match existing
 - 5. Configuration: to match existing.

6. Bird Screens: Manufacturer's standard mesh with rewireable frame.
 7. Insect Screens: Manufacturer's standard mesh with rewireable frame.
 8. Vent Cylinder, Base Flange, and Hood Material: Zinc-coated (galvanized) steel sheet, of manufacturer's standard thickness.
 9. Finish: to match existing.
- B. Louvered Penthouse-Style Gravity Ventilators: Manufacturer's standard, fabricated as indicated, with manufacturer's standard welded or sealed mechanical joints.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide [comparable product by one of the following:
 - a. Dur-Red Products.
 - b. Greenheck Fan Corporation.
 - c. Loren Cook Company.
 - d. Safe Air of Illinois.
 - e. Vent Products Co., Inc.
 3. Construction: Integral frame with base flange, weathertight cap, and weatherproof sidewall louvers.
 4. Dimensions: to match existing.
 5. Configuration: to match existing.
 6. Bird Screens: Manufacturer's standard mesh with rewireable frame.
 7. Insect Screens: Manufacturer's standard mesh with rewireable frame.
 8. Frame, Base Flange, Cap, and Louver Material: Zinc-coated (galvanized) steel sheet, of manufacturer's standard thickness.
 9. Finish: to match existing.

2.4 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches high, with removable metal hood and slotted metal collar.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 2. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - a. Custom Solution Roof and Metal Products.
 - b. Thaler Metal USA Inc.
 3. Metal: Aluminum sheet, 0.063 inch thick.
 4. Diameter: to match existing.
 5. Finish: to match existing
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
 - a. Custom Solution Roof and Metal Products.
 - b. Milcor Inc.; Commercial Products Group of Hart & Cooley, Inc.
 - c. Thaler Metal USA Inc.
3. Metal: to match existing.
4. Height: to match existing.
5. Diameter: to match existing.
6. Finish: to match existing.

2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Roof Curb Installation: Install each roof curb so top surface is level.
- D. Equipment Support Installation: Install equipment supports so top surfaces are level with each other.
- E. Roof-Hatch Installation:
 - 1. Install roof hatch so top surface of hatch curb is level.
 - 2. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
 - 3. Attach safety railing system to roof-hatch curb.
 - 4. Attach ladder-assist post according to manufacturer's written instructions.
- F. Heat and Smoke Vent Installation:
 - 1. Install heat and smoke vent so top perimeter surfaces are level.
 - 2. Install and test heat and smoke vents and their components for proper operation according to NFPA 204.
- G. Gravity Ventilator Installation: Verify that gravity ventilators operate properly and have unrestricted airflow. Clean, lubricate, and adjust operating mechanisms.
- H. Pipe Support Installation: Install pipe supports so top surfaces are in contact with and provide equally distributed support along length of supported item.
- I. Security Grilles: Weld bar intersections and, using tamper-resistant bolts, attach the ends of bars to structural frame or primary curb walls.
- J. Roof Walkway Installation:
 - 1. Verify that locations of access and servicing points for roof-mounted equipment are served by locations of roof walkways.
 - 2. Remove ballast from top surface of low-slope roofing at locations of contact with roof-walkway supports.
 - 3. Install roof walkway support pads prior to placement of roof walkway support stands onto low-slope roofing.
 - 4. Redistribute removed ballast after installation of support pads.

- K. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- L. Seal joints with butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

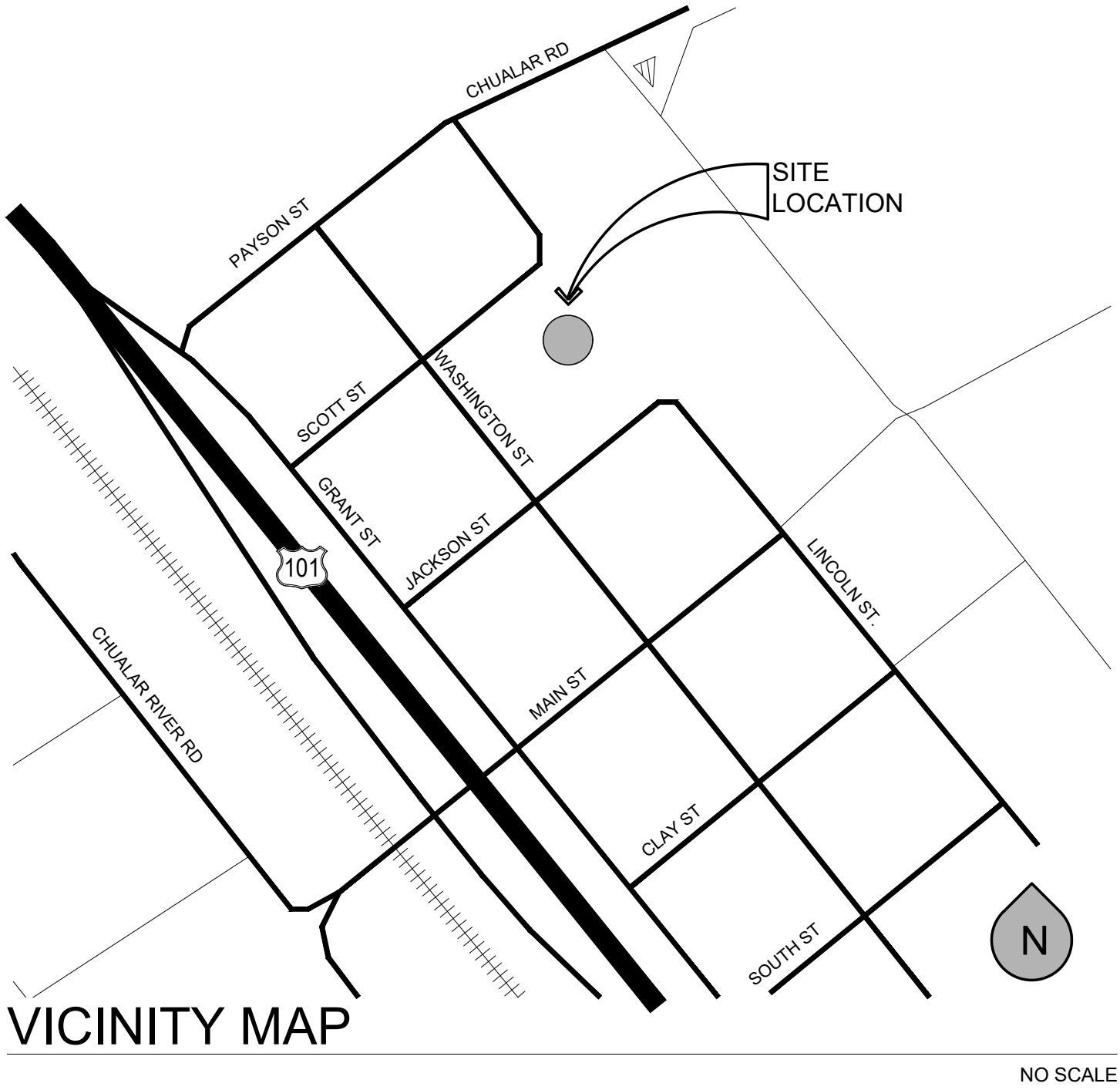
- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.
- B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- C. Clean exposed surfaces according to manufacturer's written instructions.
- D. Clean off excess sealants.
- E. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

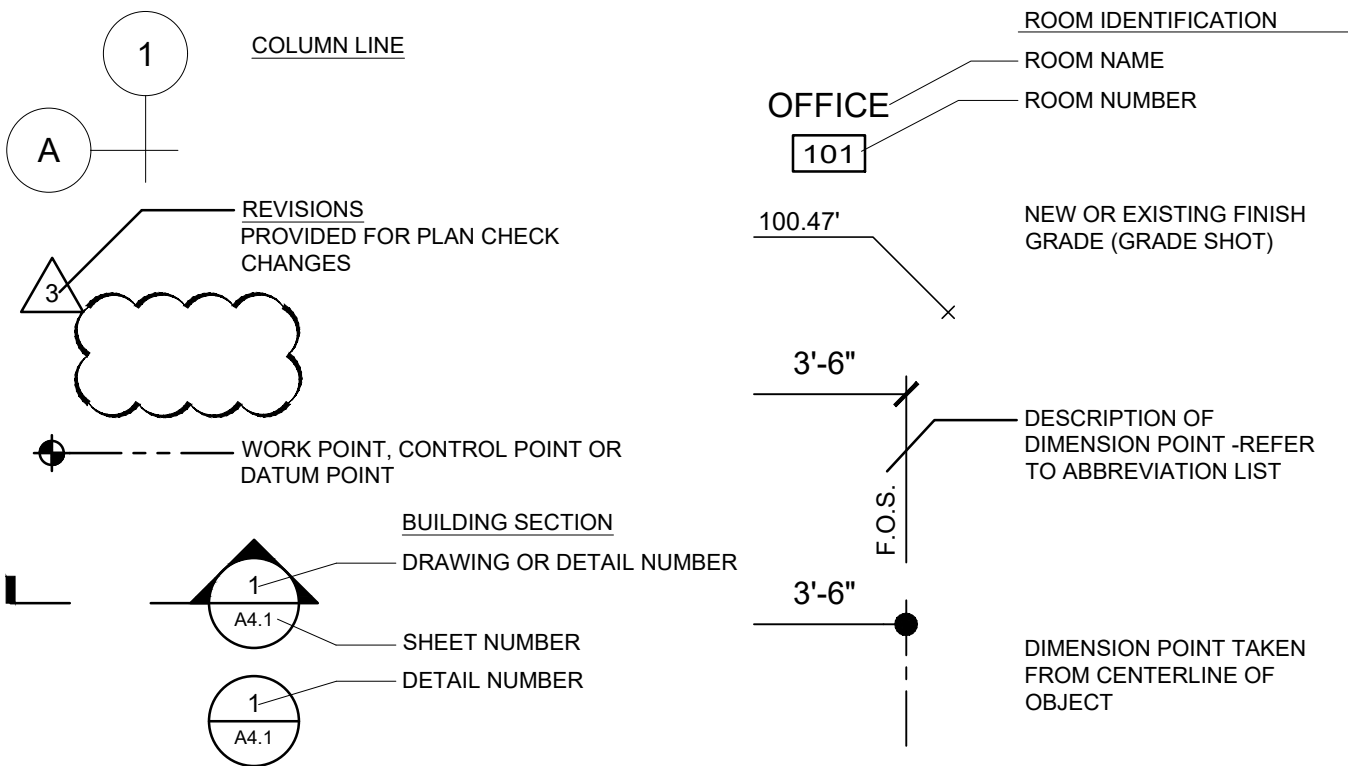
RE-ROOFING FOR:

CHUALAR UNION ELEMENTARY SCHOOL

24285 LINCOLN ST, CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT



SYMBOLS



ABBREVIATIONS

(E) EXISTING	EXT EXTERIOR	NTS NOT TO SCALE
(N) NEW	FA FIRE ALARM	ON CENTER
AC ASPHALTIC CONCRETE	FD FLOOR DRAIN	OC OWNER FURNISHED
BLDG BUILDING	FE FIRE EXTINGUISHER	OFCI CONTRACTOR INSTALLED
BLK BLOCK	FEC FIRE EXTINGUISHER CABINET	OFOI OWNER FURNISHED
BLKG BLOCKING	FIN FINISH	OWNI OWNER INSTALLED
BOT BOTTOM	FL FLOOR	PLAM PLASTIC LAMINATE
BTWN BETWEEN	FOF FACE OF FINISH	PLYWD PLYWOOD
CLG CEILING	FT FOOT OR FEET	PSI POUNDS PER SQUARE INCH
CLR CLEAR	GA GAUGE	RD ROOF DRAIN
COL COLUMN	GALV GALVANIZED	REQ REQUIRED
CONC CONCRETE	GYPBD GYPSUM BOARD	RM ROOM
CONT CONTINUOUS	HDR HEADER	RO ROUGH OPENING
DBL DOUBLE	HM HOLLOW METAL	RR RESTROOM
DEPT DEPARTMENT	HR HOUR	SF SQUARE FEET
DIA DIAMETER	IN INCH	SIM SIMILAR
DIM DIMENSION	INT INTERIOR	SPEC SPECIFICATION
DS DOWNSPOUT	LAV LAVATORY	TYP TYPICAL
DWG DRAWING	MAX MAXIMUM	UON UNLESS OTHERWISE NOTED
EA EACH	MECH MECHANICAL	W/ WITH
ELEC ELECTRICAL	MIN MINIMUM	WC WATER CLOSET
EQ EQUAL	MISC MISCELLANEOUS	W/O WITHOUT
EW EACH WAY	NIG NOT IN CONTRACT	

SHEET INDEX

T1.0 TITLE SHEET

ARCHITECTURAL

- A1.1 OVERALL DEMOLITION ROOF SITE PLAN
- A1.2 ENLARGED ROOF SITE PLAN

TOTAL SHEETS: 3

SCOPE OF WORK

- REPLACEMENT OF (E) ROOFING SYSTEM AT BUILDINGS A: CLASSROOMS, B: CLASSROOMS & RESTROOMS, C: CLASSROOMS, D: CLASSROOMS & RESTROOMS, E: CLASSROOMS & RESTROOMS, F: AUDITORIUM & RESTROOMS, J: ENTRY SHELTER, IN LIKE KIND.

CODES

2022	CALIFORNIA ADMINISTRATIVE CODE (CAC); PART 1, TITLE 24, C.C.R.
2022	CALIFORNIA BUILDING CODE (CBC); PART 2, TITLE 24, C.C.R.
2022	CALIFORNIA ELECTRICAL CODE (CEC); PART 3, TITLE 24, C.C.R.
2022	CALIFORNIA MECHANICAL CODE (CMC); PART 4, TITLE 24, C.C.R.
2022	CALIFORNIA PLUMBING CODE (CPC); PART 5, TITLE 24, C.C.R.
2022	CALIFORNIA ENERGY CODE; PART 6, TITLE 24, C.C.R.
2022	CALIFORNIA FIRE CODE (CFC); PART 9, TITLE 24, C.C.R.
2022	CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN); PART 11, TITLE 24 C.C.R.
2022	CALIFORNIA REFERENCE STANDARDS CODE; PART 12, TITLE 24, C.C.R.
2022	TITLE 19 C.C.R., PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

APPLICABLE STANDARDS
FOR A LIST OF APPLICABLE STANDARDS, INCLUDING CALIFORNIA AMENDMENTS TO THE NFPA STANDARDS, REFER TO CBC CHAPTER 35 AND CFC CHAPTER 80.

ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC & CFC, AND THE WRITTEN FIRE LIFE SAFETY PLAN.

DEFERRED SUBMITTALS

- DEFERRED SUBMITTALS PER C.B.C. 107.3.4.2
- THERE ARE NO DEFERRED SUBMITTALS FOR THIS PROJECT.

PROJECT TEAM

OWNER:
CHUALAR UNION SCHOOL DISTRICT
24285 LINCOLN STREET,
CHUALAR, CA 93925
CONTACT: RUBEN PULIDO
EMAIL: rpulido@chualarUSD.org
OWNER: (831) 679-2504 x100

ARCHITECT:
PEARTREE+BELLI ARCHITECTS
235 MONTEREY ST. SUITE B
SALINAS, CA 93901
CONTACT: DAVID PEARTREE
EMAIL: david@peartreebelli.com
PHONE: (831) 424-4620

PROJECT DATA

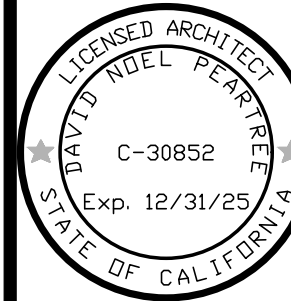
ASSESSOR PARCEL NUMBER (APN): 145-031-003-000, 145-042-003-000
ZONING: PQP - PUBLIC/ QUASI-PUBLIC

ALL BUILDING DATA IS EXISTING TO REMAIN (NO CHANGE)



Peartree+Bell
ARCHITECTS

235 MONTEREY ST., SUITE B
SALINAS, CA 93901
(831) 424-4620
PEARTREEBELLI.COM



TITLE SHEET
RE-ROOFING FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST, CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
	09/25/25	PROGRESS SET

SCALE: AS NOTED

DRAWN: YP

JOB: 25068

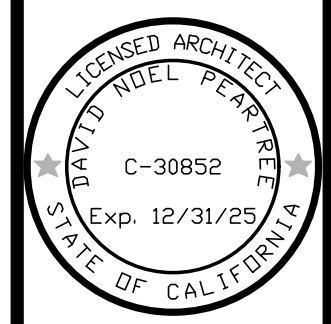
SHEET:

T1.0

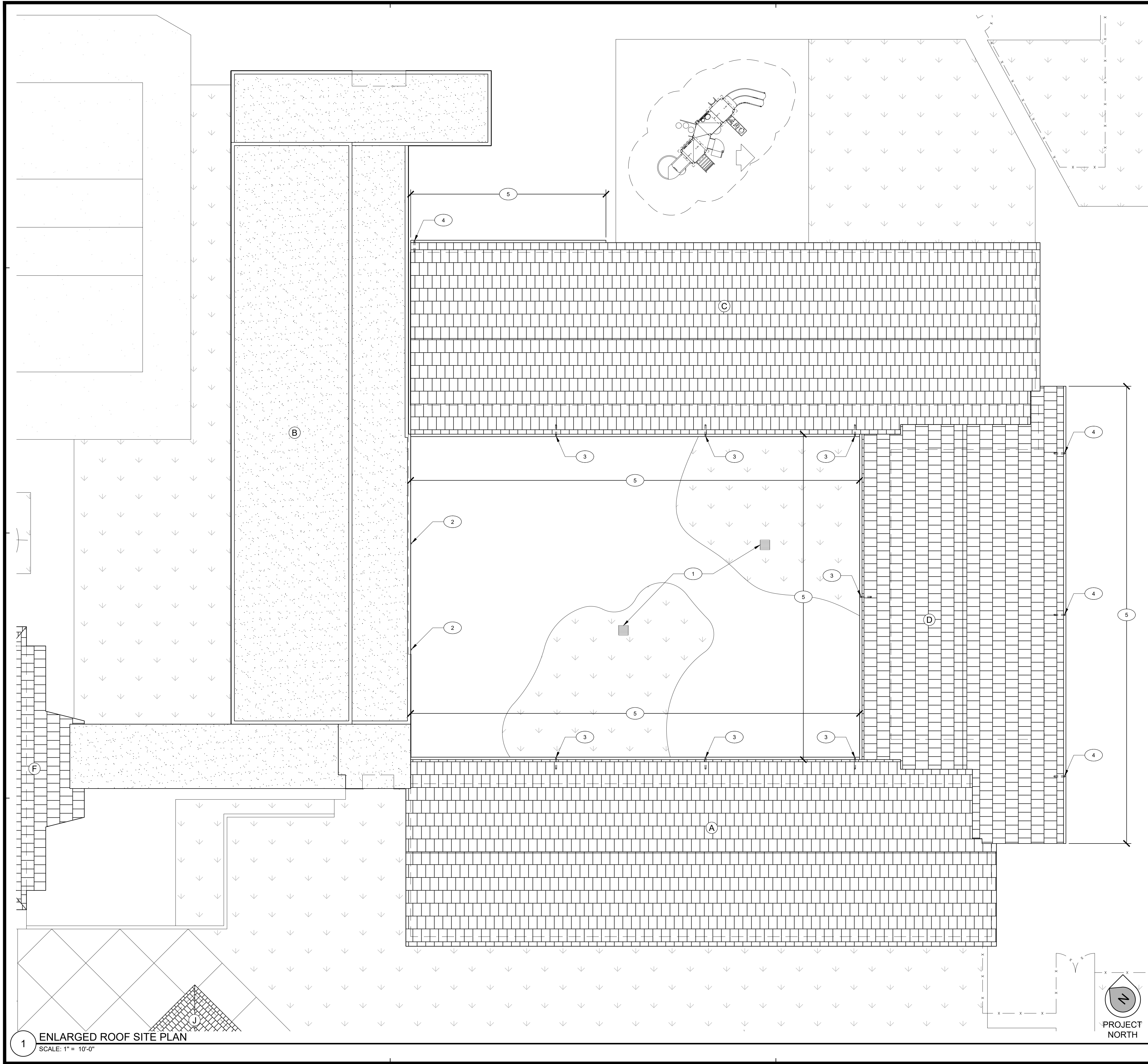
THE USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND PUBLISHED THEREOF. IF REPRODUCED OR PUBLISHED BY ANY METHOD IN WHOLE OR IN PART, IT IS PROHIBITED. TITLE TO THESE PLANS AND SPECIFICATIONS REMAINS WITH THE ARCHITECT AND VISUAL CONTACT WITH THESE COPIES SHALL BE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.



A1.1



THE USE OF THESE BINARY AND QUANTITATIVE DATA IN THE PRESENTATION OF THE ACCEPTANCE OF THESE DISTINCTIONS IS SOUGHT TO BE LIMITED TO THE SCIENTIFIC AND SPECIFIC RESEARCH WITHIN THE PROJECT, AND WILL NOT BE DISSEMINATED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE PROJECT. THE DATA WILL BE MADE AVAILABLE TO THE PROJECT AND WILL BE USED TO SUPPORT THE PROJECT'S RESEARCH AND TO SUPPORT THE PROJECT'S RESEARCH AND TO SUPPORT THE PROJECT'S RESEARCH.



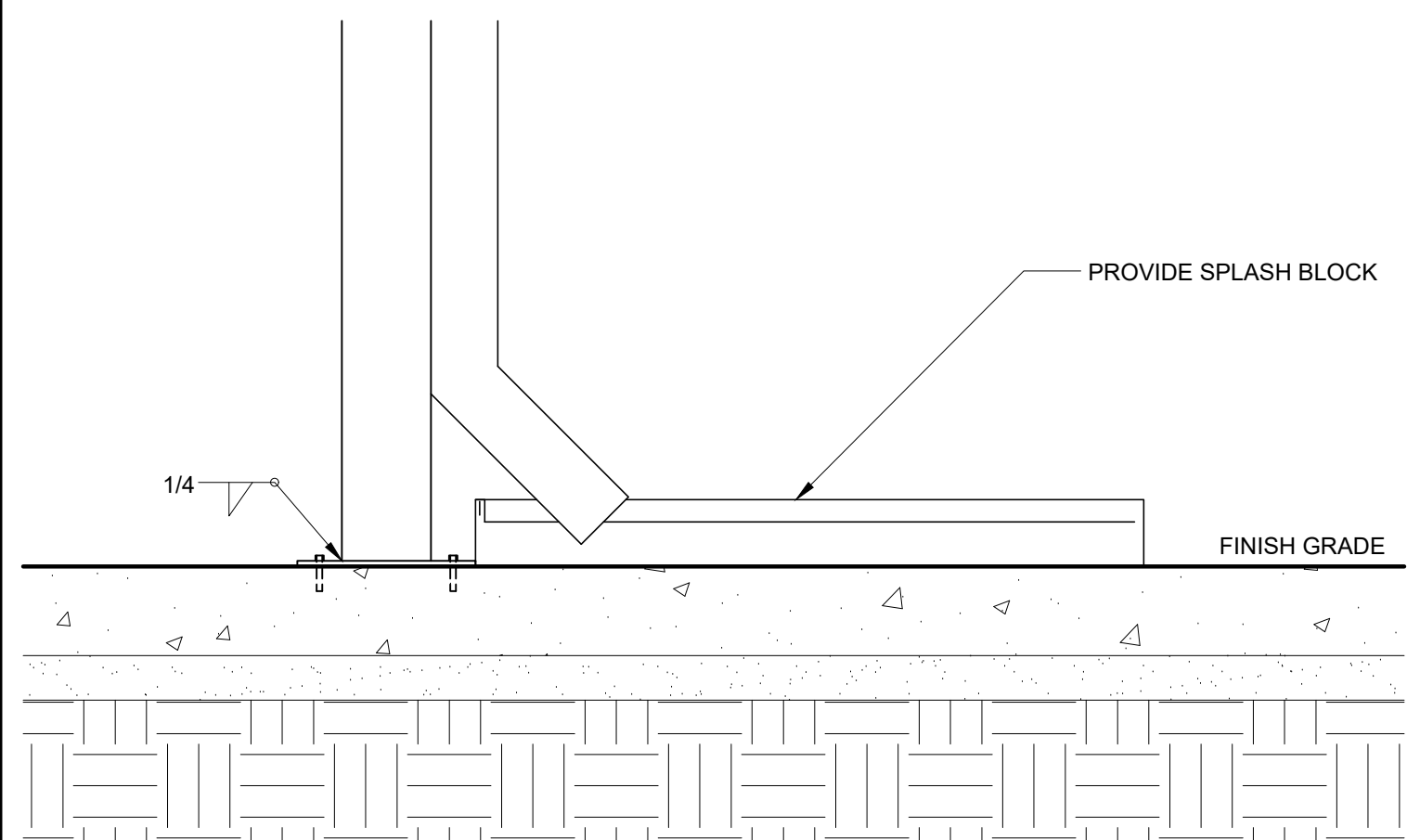
1 ENLARGED ROOF SITE PLAN
SCALE: 1" = 10'-0"

LEGEND

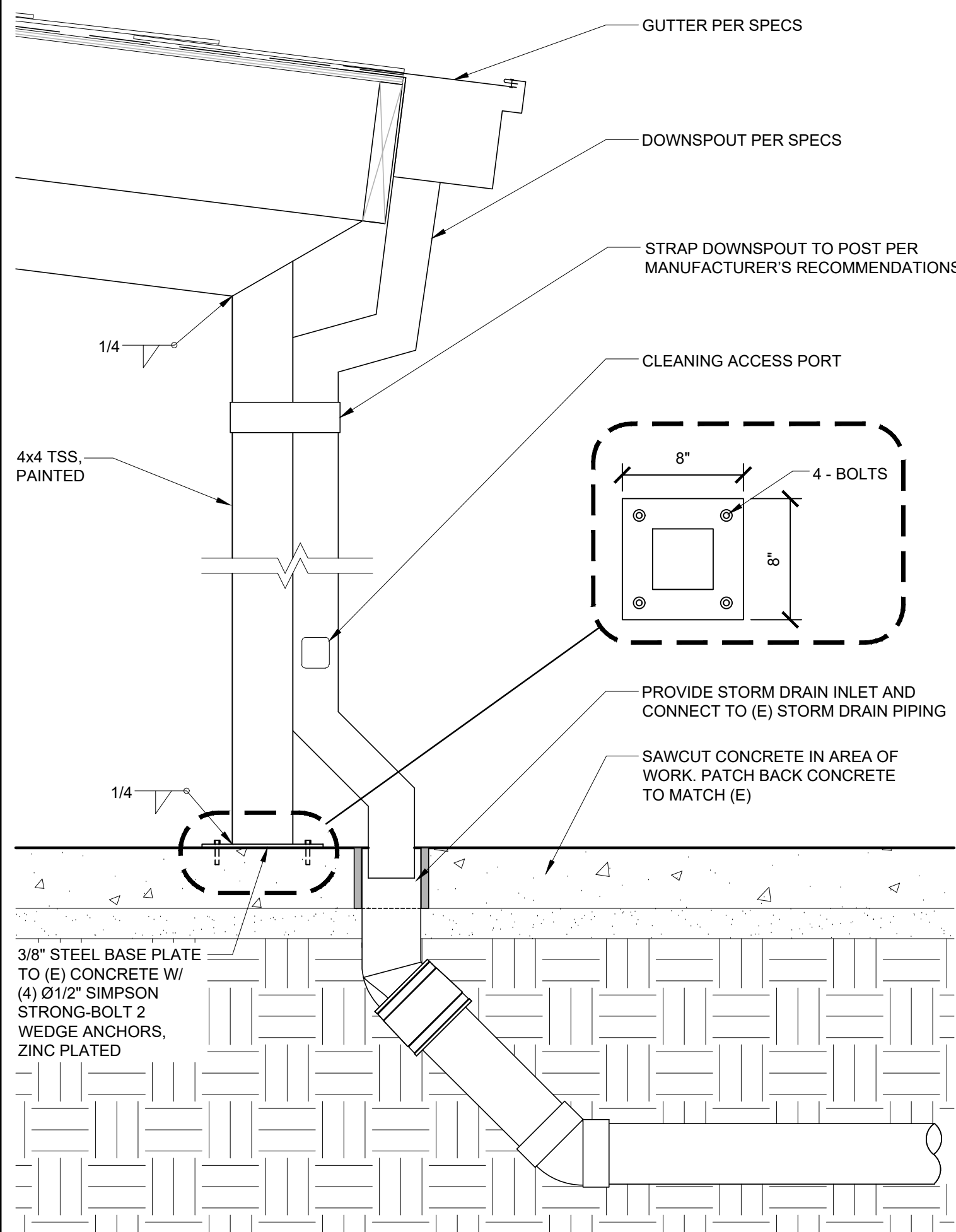
— x — x — x —	FENCE TO REMAIN	↓ ↓	LANDSCAPE TO REMAIN
(A)	ROOM LEGEND DESIGNATION	↓ ↓	ASPHALT TO REMAIN
[Pattern]	BUILT-UP ROOFING	↓ ↓	CONCRETE TO REMAIN
[Pattern]	ASPHALT SHINGLE ROOFING		

KEYED NOTES

- (E) STORM DRAIN CATCH BASIN. LOCATE PIPING, SAWCUT AND TRENCH NEW LINES AND CONNECT 9 DOWNSPOUTS. REPLACE CONCRETE AND/OR LANDSCAPE TO MATCH EXISTING. THIS WORK IS PART OF ADDITIVE ALTERNATE 001.
- (E) DOWNSPOUTS TO BE CONNECTED TO (E) STORM DRAIN VIA UNDERGROUND PIPING. THIS WORK IS PART OF ADDITIVE ALTERNATE 001.
- NEW DOWNSPOUTS TO BE PROVIDED AND CONNECTED TO (E) STORM DRAIN VIA UNDERGROUND PIPING. SEE DETAIL 3/- THIS WORK IS PART OF ADDITIVE ALTERNATE 001.
- NEW DOWNSPOUTS TO BE PROVIDED. SEE DETAIL 2/- THIS WORK IS PART OF ADDITIVE ALTERNATE 001.
- NEW GUTTER. THIS WORK IS PART OF ADDITIVE ALTERNATE 001.



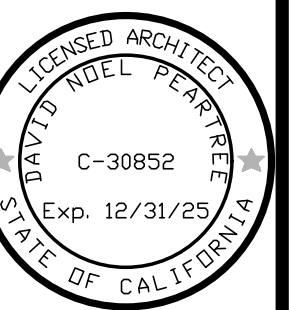
2 DOWNSPOUT W/ SPLASH BLOCK
SCALE: 1-1/2" = 1'-0"



3 DOWNSPOUT CONNECTION TO (E) STORM DRAIN
SCALE: 1-1/2" = 1'-0"



Peartree+Bell
ARCHITECTS
235 MONTEREY ST., SUITE B
SALINAS, CA 93901
(831) 424-4620
PEARTREEBELLI.COM



ENLARGED ROOF SITE PLAN
RE-ROOFING FOR:
CHUALAR UNION ELEMENTARY SCHOOL
24285 LINCOLN ST., CHUALAR, CA 93925
CHUALAR UNION SCHOOL DISTRICT

REV.	DATE	DESCRIPTION
	09/25/25	PROGRESS SET

SCALE: AS NOTED
DRAWN: YP
JOB: 25068
SHEET:

A1.2

THE USE OF THESE PLANS AND SPECIFICATIONS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY WERE PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE. REUSE, REPRODUCTION, OR PUBLICATION BY ANY METHOD IS PROHIBITED. TITLE TO THE PLANS AND SPECIFICATIONS REMAINS WITH THE ARCHITECT AND VISUAL CONTACT WITH THESE CONDITIONS SHALL BE EVIDENCE OF THE ACCEPTANCE OF THESE RESTRICTIONS.