



**NOTICE TO CONTRACTORS,
PROPOSAL,
AGREEMENT, &
SPECIAL PROVISIONS**

FOR CONSTRUCTION ON
Project No: 24-042
Senior Center Roof & HVAC Replacement

IN STANISLAUS COUNTY,
TURLOCK, CALIFORNIA.

Engineering Division

Contact Person: Charlotte Calvario
Phone: 209.668.6029
Email: ccalvario@turlock.ca.us

William D. Morris, RCE 55910
City Engineer

Proposals shall be delivered to Turlock, California
at or before 10:30 AM on Wednesday, August 27, 2025
at the office of the City Engineer,
Engineering Division
156 S. Broadway, Suite 150
Turlock, CA 95380

LICENSEES RESPONSIBLE FOR SPECIFICATIONS

Contract documents prepared by or under the direction of the following registered persons:

City Engineer (Front End Specifications)

William D. Morris

Engineering Division

156 S. Broadway Suite 150

Turlock, CA 95380



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CITY OF TURLOCK, CALIFORNIA

NOTICE TO CONTRACTORS

Sealed proposals will be received by the City Engineer of the City of Turlock, Engineering Division, 156 S. Broadway, Suite 150, Turlock, California 95380, until 10:30 AM on Wednesday, August 27th, 2025, for:

City Project No. 24-042 **Senior Center Roof & HVAC Replacement**

In accordance with and as described and provided in the plans, specifications and the proposed form of contract therefore, all of which are on file in the office of the City Engineer, and to which special reference is hereby made.

No verbal, telegraphic, electronic mail, facsimile, or telephone Proposals shall be considered.

An optional Pre-Bid meeting will be held on Thursday, August 14, 2025 at 10:30 AM at the Turlock Senior Center located at 1191 Cahill St, Turlock, CA 95380. Only prime contractors who intend to bid on the project are required to attend. Sub-contractors and suppliers may attend but are not required to do so. The purpose of the pre-bid meeting is to provide a venue for bidders to view the site of work and ask questions of the designer and City staff.

Proposals are required to be complete and for the entire work, materials and improvements unless the contrary is indicated in the specifications.

In accordance with the provisions of California Business and professions Code, Section 7028, Contractor shall possess one of the following Contractor license(s) at the time of bid and for the duration of the contract:

1. C-39 – Roofing Contractor
2. C-20 – Warm-Air Heating, Ventilating and Air-Conditioning Contractor

Failure to possess a specified license shall render the Bid as non-responsive, shall act as a bar to award of the contract to any Bidder not possessing said license(s) at the time of Bid opening and shall result in the forfeiture of the security of said Bidder. Furthermore, any Bidder or Contractor not so licensed shall be subject to all legal penalties imposed by law, including, but not limited to, any appropriate disciplinary action by the Contractor's License Board.

Each proposal must be accompanied by cash, cashier's check, or check certified by a responsible bank, or by a bid bond, the proposed form of which is on file in the office of the City Engineer of said City and to which special reference is hereby made in a sum not less than ten percent (10%) of the total amount bid, payable to the City of Turlock as liquidated damages in the case the bidder is awarded the contract and fails within ten (10) days after the date of mailing to him by the City Engineer of a notice of award

of the contract and that the contract is ready for signature to execute the above-mentioned written contract and file with the City Engineer satisfactory insurance certificates as required by the terms of said contract and satisfactory bonds as required by law for the faithful performance of said contract and for the protection of material, men and laborers. Special reference is hereby made to Sections 5100, et. seq., of the Public Contracts Code of the State of California and to the proposed forms for said bonds now on file in the office of the said City Engineer for further particulars regarding bonds.

Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county Stanislaus in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at 156 S. Broadway St, Turlock, CA 95380 and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/DLSR/PWD>.

Bidders' attention is directed to the insurance requirements in the contract. It is highly recommended that bidders confer with their respective insurance carriers or brokers to determine in advance of bid submission the availability of insurance certificates and endorsements prescribed and provided herein. If an apparent low bidder fails to comply strictly with the insurance requirements, that bidder may be disqualified from award of the contract.

No proposal will be considered unless made on forms furnished by the City Engineer of said City at his office of said City. Each proposal must be sealed, and the envelope containing the same must be addressed to the City Engineer of the City of Turlock and must be plainly marked. Each proposal shall clearly identify the bidders name and address on the sealed envelope.

Each bid shall separately state in figures the price offered for the approximate quantity of each item set forth and shall also state in words and figures the total contract price. Quantities set forth in the proposal form and in the specifications are approximate only, being given as a basis for comparison of bids, and the City of Turlock does not expressly or implied agree that the actual amount of work or materials will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work or materials as may be deemed necessary by the City Engineer.

Proposals may not be withdrawn for a period of sixty (60) days after the time fixed for opening of proposals. The City Council of the City of Turlock reserves the right to reject any and all proposals or any part thereof and to waive any errors or informalities in any proposals and to set and act as sole judge of the merit and qualifications of the equipment, supplies or services offered.

At the request and expense of Contractor, pursuant to Division 2, Part 5, Section 22300, et. seq., of the Public Contracts Code, securities equivalent to any funds withheld as retention from progress payments made under this contract may be deposited with the City of Turlock or with a State or Federally chartered bank as escrow agent, who shall pay such moneys to Contractor upon completion of the contract.

Copies of the Contract Documents, including Instructions to Bidders, Bid Proposal Forms, Plans and Specifications, may be downloaded from the engineering division's web site or purchased for a non-refundable fee of **Thirty Five** dollars (**\$35**) at the Office of the City Engineer, 156 S. Broadway, Ste.

150, Turlock, CA 95380, Phone (209) 668-5520. For additional information, go to **<http://www.cityofturlock.org/capitalprojects>**

The U.S. Department of Transportation (DOT) provides a toll-free “hotline” service to report bid rigging activities. Bid rigging activities can be reported Mondays through Fridays, between 8:00 a.m. and 5:00 p.m., Eastern Time, Telephone No. 1-800-424-9071. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report these activities. The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

No contractor or subcontractor may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5. No contractor or subcontractor may be awarded a contract for public work on a public works project unless registered with the Department of Industrial Relations pursuant to Labor Code Section 1725.5.

This project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. The contractors and subcontractors must furnish electronic certified payroll records to the Labor Commissioner.

The contractor shall post job site notices prescribed by regulation. (*See* 8 Calif. Code Reg. §16451(d) for the notice that previously was required for projects monitored by the CMU.)

DATED: 07/31/2025

CITY OF TURLOCK

By: 

William D. Morris, RCE 55910
City Engineer

PROPOSAL SUBMITTAL CHECKLIST

The bidder shall provide a complete proposal in a sealed envelope before
10:30 AM on Wednesday, August 27, 2025
at the address shown on the cover sheet of these specifications. FAILURE TO PROVIDE ALL THE
REQUIRED DOCUMENTS LISTED IN THE TABLE BELOW MAY CAUSE THE PROPOSAL TO
BE CONSIDERED NON-RESPONSIVE.

Complete Proposal

Page No.

- | | |
|--|-------|
| <input type="checkbox"/> PROPOSAL AND BIDDING FORM | 5-11 |
| <input type="checkbox"/> AFFIDAVIT | 12 |
| <input type="checkbox"/> INFORMATION REQUIRED OF BIDDER..... | 13-14 |
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PROPOSAL

Project No. 24-042

Senior Center Roof & HVAC Replacement

City of Turlock, California

DATED: _____

To: The Honorable City Council of the City of Turlock, California:

NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

PLACE OF RESIDENCE: _____

Bids are to be submitted for the entire work. The amount of the bid for comparison purposes will be the total of all items. The bidder shall set forth for each unit basis item of work a unit price and a total for the item, and for each lump sum item a total for the item, all in clearly legible figures in the respective spaces provided for that purpose.

In the case of unit basis items, the amount set forth under the "Item Total" column shall be the product of the unit price bid and the estimated quantity for the item. In case of discrepancy between the unit price and the total set forth for a unit basis item, the unit price shall prevail except as provided in (a) or (b), as follows:

(a) If the amount set forth as unit price is unreadable or otherwise unclear, or is omitted, or is the same as the amount as the entry in the item total column, then the amount set forth in the item total column for the item shall prevail and shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price;

(b) (Decimal Errors) If the product of the entered unit price and the estimated quantity is exactly off by a factor of ten, one hundred, etc., or one-tenth, or one-hundredth, etc. from the entered total, the discrepancy will be resolved by using the entered unit price or item total, whichever most closely approximates percentage wise the unit price or item total in the Department's Final Estimate of Cost.

In accordance with the annexed Notice to Contractors, the undersigned, as bidder, declares that he has carefully examined the location of the proposed work, the plans, specifications and technical requirements therefore, and the proposed forms of contract and bonds mentioned or referred to in said Notice and on file in the Office of the City Engineer of the City of Turlock, together with the prevailing rate of per diem wages for each craft or type of workmen needed to execute said contract; and he proposes and agrees that if this proposal is accepted, he will furnish all labor, materials, equipment, plant transportation, service, sales taxes, permit fees and other costs necessary to complete the

construction in strict conformity to the plans and specifications and he will enter into a written contract with the City of Turlock in the form of contract on file in the Office of the City Engineer for such purposes, and that he will execute and/or provide all bonds and insurance certificates required by law and/or by said contract and/or mentioned in said Notice to Contractors all in accordance with and subject to all applicable laws, and that he will take in full payment therefore the following unit prices, to wit:

BIDDER'S FORM

PROJECT TITLE: Senior Center Roof & HVAC Replacement

PROJECT NUMBER: 24-042

OPENING DATE: August 27, 2025

OPENING TIME: 10:30 AM

BASE BID					
Item No.	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Total
1	Mobilization & Demobilization	LS	1		
2	Roof Demolition	LS	1		
3	Allowance for Repairs	ALLOW	1	\$10,000.00	\$10,000.00
4	Flat Roof Replacement - 60 mil PVC	LS	1		
5	Remove miscellaneous roof appurtenances	LS	1		
6	Roof Walkway Pads	LS	1		
7	Senior Center HVAC Unit 1 - 7.5 Ton (East Side)	LS	1		
8	Senior Center HVAC Unit 1 - 7.5 Ton (West Side)	LS	1		
9	Senior Center HVAC Unit1 - 3.5 Ton (East Side)	LS	1		
10	Senior Center - MAU Evaporative Cooler	LS	1		
11	Mechanical Equipment Screening	LS	1		
12	Roof Curbs for HVAC	LS	1		
13	All other work not included in other bid items	LS	1		
BASE BID - TOTAL					

Bidder has examined and carefully studied the Bidding documents and other related data identified in the Bidding Documents and the following Addenda, receipt of which is hereby acknowledged.

ADDENDA

No. _____	Date _____	Signed _____
No. _____	Date _____	Signed _____
No. _____	Date _____	Signed _____
No. _____	Date _____	Signed _____
No. _____	Date _____	Signed _____

TOTAL BASE BID WRITTEN IN FIGURES: \$ _____, _____, _____ . _____

TOTAL BASE BID WRITTEN IN WORDS: _____

CONTRACTOR: _____

Bidder shall provide pricing for the following additive bid alternate which may or may not be included in the contract price at City's option. The basis of award shall be the lowest base bid price without consideration of the additive bid alternate.

NOTE: The Additive Bid Alternate cost entered on the Bidder's Form shall be the incremental cost increase to upgrade from Bid Item #4 – 60 mil PVC to 2-ply KEE. For example, if the bidder's price for the base bid for flat roof replacement system of PVC totals \$280,000, and the total cost of work including a 2-ply KEE roofing system totals \$300,000, then the amount to be entered for the Additive Bid Alternate should be \$20,000.

ADDITIVE BID ALTERNATE					
Item No.	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Total
A1	Flat Roof Replacement - 2 Ply KEE	LS	1		
ADDITIVE BID ALTERNATE - TOTAL					

TOTAL ADDITIVE BID ALTERNATE WRITTEN IN FIGURES:

\$ __, __ __ __, __ __ __. __ __

TOTAL ADDITIVE BID ALTERNATE WRITTEN IN WORDS:

COMPANY'S NAME: _____

BY: _____

ADDRESS: _____

(Number)

(Street)

(City)

(State)

(ZIP)

CONTRACTOR'S PHONE #: _____

CONTRACTOR'S EMAIL: _____

NOTE: CONTRACTOR WILL BE REQUIRED TO LIST THEIR LICENSE NUMBER, EXPIRATION DATE, AND APPROPRIATE STATEMENT REGARDING PERJURY AND SIGNED BY INDIVIDUAL AUTHORIZED TO DO SO. FAILURE TO INCLUDE THE ABOVE ITEMS MAY CAUSE SAID CONTRACTOR'S BID TO BE REJECTED.

_____, Contractor's License # _____, Class____
(Company's Name)

Expires_____. DIR #:_____

This information is true, is provided as per Section 7028.15 of the Business and Professions Code, and is made herein under penalty of perjury.

X _____
(Bidder's Signature) (Date)

If the proposal is accepted and the undersigned shall fail to contract as aforesaid and fail to file with the City insurance certificates as required by said contract, within fourteen (14) days after the bidder has received notice from the City Engineer or his representative of the City of Turlock that the contract has been awarded to bidder and is ready for signature, the City of Turlock may, at its option, determine that the bidder has abandoned his contract, and thereupon this proposal and the acceptance thereof shall be null and void.

Also accompanying this proposal is an affidavit of non-collusion and questionnaire to general contractors, a statement of proposed subcontractors, if any, the address of mill, shop or office of any subcontractor, and a statement of work to be performed by subcontractors.

The names and addresses of persons interested in the foregoing proposal as principals are as follows:

(IMPORTANT NOTICE: If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a partnership,

state true name of firm, also names of all individual co-partners composing firm; if bidder or other interested person is an individual, state first and last name in full.)

Licensed in accordance with an act providing for the registration of Contractors,
License No. _____ Expiration Date _____.

DATED: _____, 20____

Address: _____

Phone: _____

Email: _____

X _____
Signature of Bidder

NOTE: If bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officers authorized to sign contracts on behalf of the corporation; if bidder is a co partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign contracts in behalf of the co partnership; and, if bidder is an individual, his signature shall be placed above. If a signature is by an agent other than an officer of a corporation or a member of the partnership, a Power of Attorney must be on file with the City Clerk prior to opening or submitted with the bid; otherwise, the bid will be disregarded as irregular and unauthorized.

AFFIDAVIT

The undersigned bidder, being first duly sworn, deposes and says that he/she are the party making the foregoing proposal or bid, that this bid is genuine and not collusive or sham, that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any other person or bidder, to put in a sham bid, or that said other person shall refrain from bidding, and has not in any manner sought by collusion to secure any advantage against the said City or any person interested in said improvement, for him/herself or any other person.

X _____
Signature of Bidder

Jurat (Government Code Section 8202)

State of California

County of _____

Subscribed and sworn to (or affirmed) before me on this _____ day of _____, 20____

by _____ proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

(AFFIX SEAL)

NOTARY PUBLIC SIGNATURE

NOTARY PUBLIC PRINTED NAME

INFORMATION REQUIRED OF BIDDER

The bidder is required to provide the following information. Additional sheets may be attached if necessary.

Contractor's mailing address:_____

Contractor's telephone number:_____

Number of years' experience as a contractor in construction work or installation work similar to that required in these specifications:

Name of person who inspected the site of the proposed work for your firm:

Date of Inspection:_____

List at least four projects completed as of recent date:

Project No. and Title: _____

Class and Type of Work: _____

Name, Address, and Phone No. of Owner _____

Registered Engineer in Charge of Project: _____

Total Contract amount: _____

Contract amount you performed: _____

Name of Prime Contractor if you were Sub: _____

Date Completed: _____

Liquidated Damages Assessed: _____

Project No. and Title: _____

Class and Type of Work: _____

Name, Address, and Phone No. of Owner _____

Registered Engineer in Charge of Project: _____

Total Contract amount: _____
Contract amount you performed: _____
Name of Prime Contractor if you were Sub: _____
Date Completed: _____
Liquidated Damages Assessed: _____

Project No. and Title: _____
Class and Type of Work: _____
Name, Address, and Phone No. of Owner _____
Registered Engineer in Charge of Project: _____
Total Contract amount: _____
Contract amount you performed: _____
Name of Prime Contractor if you were Sub : _____
Date Completed: _____
Liquidated Damages Assessed: _____

Project No. and Title: _____
Class and Type of Work: _____
Name, Address, and Phone No. of Owner _____
Registered Engineer in Charge of Project: _____
Total Contract amount: _____
Contract amount you performed: _____
Name of Prime Contractor if you were Sub : _____
Date Completed: _____
Liquidated Damages Assessed: _____

BIDDER'S BOND

KNOW ALL MEN BY THESE PRESENTS:

That we _____ as
BIDDER, and _____ as
SURETY a corporation duly organized under the laws of the State of _____
and duly licensed to become sole Surety on bonds required and authorized by the State of California, as
SURETY, are held and firmly bound unto the City of Turlock, hereinafter called the City, in the penal
sum of TEN PERCENT (10%) OF THE TOTAL AMOUNT OF THE BID of the Bidder above named,
submitted by said Bidder to the City, for the work described below, for the payment of which sum in
lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors,
administrators and successors, jointly and severally, firmly by these presents. In no case shall the liability
of the Surety hereunder exceed the sum _____

Dollars (\$ _____).

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, whereas the bidder has submitted the
above-mentioned bid to the City for certain construction specifically described as follows for which bids
are to be opened at Engineering Division, City Hall, 156 S. Broadway Suite 150, Turlock, California,
on

_____, _____, 20____, at_____.
(day) (date) (time)

for **Project No. 24-042, "Senior Center Roof & HVAC Replacement ."**

NOW, THEREFORE, if the aforesaid Bidder is awarded the contract and, within the time manner
required under the specifications after the prescribed forms are presented to him for signature, enters
into a written contract in the prescribed form in accordance with the bid, and files the two bonds with
the City, one to guarantee faithful performance and the other to guarantee payment for labor and
materials as required by law, then obligation shall be null and void; otherwise, it shall be and remain in
full force and virtue.

In the event suit is brought upon this bond by the Obligee and judgment is recovered, the Surety shall
pay all costs incurred by the Obligee in such a suit, including a reasonable attorney's fee to be fixed by
the court.

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

BIDDER

_____(SEAL)
(Bidder's Name and Corporate Seal)

(Signature)

(Print Name and Title)

(ATTACH ACKNOWLEDGMENT OF BIDDER)

SURETY

_____(SEAL)
(Surety's Name and Corporate Seal)

(Signature)

(Print Name and Title)

**(ATTACH ACKNOWLEDGMENT OF SURETY'S
ATTORNEY-IN-FACT)**

NOTE: ATTACH CERTIFIED COPY OF POWER OF ATTORNEY

SUBCONTRACTORS
City Project No. «Project_Number»
Senior Center Roof & HVAC Replacement

Prime Contractor:_____ DIR NUMBER:_____

Pursuant to California Public Contract Code §4100, the Bidder shall list each subcontractor who will perform Work or Labor or who will render service to the Prime Contractor in or about the construction of the Work or Improvement, or a subcontractor duly licensed who, under subcontract to the Prime Contractor, specially fabricates and installs a portion of the Work or Improvement according to detailed Drawings contained in the Contract Documents, in an amount in excess of 1/2 of 1 percent of the Prime Contractor's Total Bid or, in the case of Bids or Offers for the construction of streets or highways, including bridges, in excess of 1/2 of 1 percent of the Prime Contractor's total Bid or \$10,000 whichever is greater. After the opening of Bids, no changes or substitutions will be allowed except as otherwise provided by law. The listing of more than one subcontractor for each item of Work to be performed with the words "and/or" will not be permitted.

IF NO SUBCONTRACTORS WILL FURNISH WORK, THEN WRITE "NONE" BELOW IN THE SPACE PROVIDED.

NAME	LICENSE NUMBER	DIR NUMBER	ADDRESS	WORK ITEMS TO BE PERFORMED AND % OF ITEM



AGREEMENT

FOR PUBLIC IMPROVEMENT

City Project No. 24-042

Senior Center Roof & HVAC Replacement

THIS PUBLIC IMPROVEMENT AGREEMENT (the “Agreement”) is entered into by and between the CITY OF TURLOCK, a California municipal corporation (“City”), and _____, a _____ (“Contractor”), on this ____ day of _____ 20__ (the “Effective Date”). City and Contractor may be collectively referred to herein as the “Parties” or individually as “Party.” There are no other parties to this Agreement.

RECITALS

- A. City seeks a duly qualified and licensed firm experienced in the construction of _____ (the “Project”).
- B. The Project involves the expenditure of funds in excess of \$5,000 and constitutes a “public project” pursuant to Public Contract Code section 20161.
- C. Contractor has made a proposal to City to provide construction services, a copy of which is attached and incorporated hereto as **Exhibit A** (the “Services”).
- D. City has determined it is necessary and desirable to employ the services of Contractor to perform construction work on the Project.
- E. City has taken appropriate proceedings to authorize construction of the Project and execution of this contract pursuant to Public Contract Code section 20160 et seq.; specifically, on _____, 20__, at a duly noticed meeting of the City Council of the City of Turlock, this contract for the construction of the improvements hereinafter described was awarded to Contractor as the lowest responsive and responsible bidder for said improvements.

NOW, THEREFORE, in consideration of the promises and covenants set forth below, the Parties agree as follows:

AGREEMENT

1. Contract Documents: This Agreement, together with the following documents, are collectively referred to herein as the “Contract Documents”:

- i. Notice to Bidders;
- ii. Contractor’s Bid or Proposal accepted by City;
- iii. Special Provisions of the City of Turlock for Senior Center Roof & HVAC Replacement ;
- iv. Plans and detailed drawings prepared for this Project and approved by City (“Project Plans”);
- v. All bonds and insurance required in any of the Contract Documents;
- vi. Any and all supplemental agreements amending, decreasing, or extending the work contemplated or which may be required to complete the work in a substantial and acceptable manner; and
- vii. The current edition of the City of Turlock Standard Specifications and Drawings.

All of the Contract Documents are intended to incorporate the terms of the others so that any work called for in one and not mentioned in the other, or vice versa, is to be executed the same as if mentioned in all said documents. The documents comprising the complete contract will hereinafter be referred to as the “Contract.” In case of any dispute regarding the terms of the Contract, the decision of the City Engineer shall be final.

2. Term. The Contract shall be effective as of the Effective Date first stated above. Contractor shall not commence work on the Project until it has been given notice by City (“Notice to Proceed”). The Contract shall terminate one (1) year(s) after City accepts Contractor’s performance of the Services by recording a Notice of Completion with the County of Stanislaus Clerk Recorder (the “Term”), unless the Parties mutually agree in writing to terminate the Contract earlier or extend the Term in an agreed writing executed by both Parties.

3. Scope of Work.

(a) *Services.* Contractor shall perform the Services described in Exhibit A, subject to all terms and conditions in the Contract. Contractor shall not receive additional compensation for the performance of any Services not described therein.

(b) *Modification.* City, at any time, by written order, may make changes within the general scope of the work under this Agreement or issue additional instructions, require additional work or direct deletion of work. Contractor shall not proceed with any change involving an increase or decrease in the Contract Price, as defined in Section 4 of this Agreement, without prior written authorization from City. Contractor shall not be entitled to compensation for the performance of any such unauthorized work. Contractor further waives any and all right or remedy by way of restitution or quantum meruit for any and all extra or changed work performed without express and prior written authorization of City. Notwithstanding the foregoing, Contractor shall promptly commence and diligently complete any change to the work subject to City's written authorization issued pursuant to this Section; Contractor shall not be relieved or excused from its prompt commencement of diligent completion of any change subject to City's written authorization by virtue of the absence or inability of

Contractor and City to agree upon the extent of any adjustment to the completion schedule or Contract Price on account of such change. The issuance of a change order pursuant to this Section 3 in connection with any change authorized by City shall not be deemed a condition precedent to Contractor's obligation to promptly commence and diligently complete any such change authorized by City hereunder. City's right to make changes shall not invalidate the Contract nor relieve Contractor of any liability or other obligations under the Contract. Any requirement of notice of changes in the scope of work to Contractor's surety shall be the responsibility of Contractor.

(c) *Specific Materials & Performance of Work.* Contractor shall furnish all tools, equipment, facilities, labor, and materials necessary to perform and complete, in good workmanlike manner, the work of general construction as called for and in the manner designated in, and in strict conformity with, the plans and specifications for said work entitled, "**Special Provisions for Senior Center Roof & HVAC Replacement .**" The equipment, apparatus, facilities, labor, and material shall be furnished, and said work performed and completed as required by the Contract under the direction and supervision, and subject to the approval, of the City Engineer or City Engineer's designated agent.

(d) *Exhibits.* All "Exhibits" referred to below or attached hereto are, by this reference, incorporated into the Contract.

	<u>Exhibit Designation</u>	<u>Exhibit Title</u>
1.	Exhibit A	Contractor's Proposal for Services
2.	Exhibit B	Payment by Force Account
3.	Exhibit C	Workers' Compensation Insurance Certification
4.	Exhibit D	Performance Bond
5.	Exhibit E	Payment Bond

4. **Contract Price.** City shall pay, and Contractor shall accept in full payment for the work set forth above in Section 3, Scope of Work, an amount not to exceed _____ **Dollars (\$ _____ .00)** (the "Contract Price"). Said amount shall be paid pursuant to Section 8 of this Agreement. The Contract Price may only be changed by a contract change order. The value of any work covered by a contract change order for an adjustment in the Contract Price will be determined in the sole discretion of City as follows:

(a) If the work performed is on the basis of unit prices contained in the Contract Documents, the change order will be determined in accordance with the provisions in Section 4-1.05, "Changes and Extra Work", of the Caltrans Standard Specifications, as applicable; or

(b) If the work performed is not included on the engineer's estimate associated with a unit price, the change order will be by a mutually agreed lump sum; or

(c) If the change order is not determined as described above in either subdivision (a) or (b), the change order will be determined on the basis of force account in accordance with the provisions set forth in **Exhibit B**, "Payment by Force Account," attached hereto and incorporated herein by reference.

5. **Time for Performance.** The time fixed for the commencement of work under the Contract is within ten (10) working days after the Notice to Proceed has been issued. The work on this project shall be substantially completed on or before the expiration of **thirty (30)** working days (the "Substantial Completion Due Date") beginning on the first day of work or no later than the tenth day after the Notice to Proceed has been issued. All work on this project, including all punch list items, shall be completed on or before the expiration of **fourty five (45)** working days (the "Final Completion")

Due Date”) beginning on the first day of work or no later than the tenth day after the Notice to Proceed has been issued.

(a) *Right of City to Increase Working Days:* If Contractor fails to complete the Services by the Substantial and Final Completion Due Dates, the City Engineer shall have the right to increase the number of working days in the amount the City Engineer may determine will best serve the interests of City, and if the City Engineer desires to increase said number of working days, the City Engineer shall have the further right to charge Contractor and deduct from the final payment for the work the actual cost of engineering, inspection, superintendence, and other overhead expenses which are directly chargeable to Contractor, and which accrue during the period of such extension, except that the cost of the final service and preparation of the final estimates shall not be included in such charges. No extension of time for completion of Services under the Contract shall be considered unless requested by Contractor at least twenty (20) calendar days prior to the Substantial and Final Completion Due Dates, in writing, to the City Engineer.

The Substantial and Final Completion Due Dates may only be changed by a contract change order. The value of any work covered by a contract change order for an adjustment in the Substantial and Final Completion Due Dates will be determined as follows:

- i. Additional working days will be awarded where the amount of time is mutually agreed upon by Contractor and the City Engineer; or
- ii. Additional working days will be awarded where Contractor is prevented from completing any part of the work identified on the critical path and:
 1. where the delay is caused by acts of public enemy, fire, floods, tsunamis, earthquakes, epidemics, quarantine restrictions, strikes, labor disputes, shortage of materials and freight embargos, provided that Contractor shall notify Engineer in writing of the causes of delay within fifteen (15) days from the beginning of that delay; or
 2. where the delay is caused by actions beyond the control of Contractor; or
 3. where the delay is caused by actions or failure to act by the City Engineer.

Contractor shall not be entitled to an adjustment in the Substantial and Final Completion Due Dates for delays within the control of Contractor. Delays resulting from and within the control of a subcontractor or supplier of Contractor shall be deemed to be delays within the control of Contractor.

(b) *Excusable Delays.* Contractor shall not be in breach of the Contract in the event that performance of Services is temporarily interrupted or discontinued due to a “Force Majeure” event which is defined as: riots, wars, sabotage, civil disturbances, insurrections, or explosions; natural disasters, such as floods, earthquakes, landslides, and fires; strikes, lockouts, and other labor disturbances; or other catastrophic events, which are beyond the reasonable control of Contractor. Force Majeure does not include Contractor’s financial inability to perform, Contractor’s failure to obtain any necessary permits or licenses from other governmental agencies, or Contractor’s failure to obtain the right to use the facilities of any public utility where such failure is due solely to the acts or omissions of Contractor. If Contractor’s performance of the Services is delayed by an excusable delay, the Substantial and Final Completion Due Dates shall be extended for such reasonable time as

determined by the City Engineer. Extensions in time must be requested by Contractor within fifteen (15) calendar days of the excusable delay in order to receive consideration.

(c) *Emergency - Additional Time for Performance - Procurement of Materials.* If, because of war or other declared national emergency, the federal or state government restricts, regulates, or controls the procurement and allocation of labor or materials, or both, and if solely because of said restrictions, regulations or controls, Contractor is, through no fault of Contractor, unable to perform the Services, or the work is thereby suspended or delayed, any of the following steps may be taken:

- i. City may, pursuant to resolution of the City Council, grant Contractor additional time for the performance of the Contract, sufficient to compensate in time, for delay or suspension.

To qualify for such extension in time, Contractor within ten (10) days of Contractor's discovering such inability to perform, shall notify the City Engineer in writing thereof, and give specific reasons therefore; the City Engineer shall thereupon have sixty (60) days within which to procure such needed materials or labor as is specified in this agreement, or permit substitution, or provide for changes in the work in accordance with subdivision (b) of this Section.

Substituted materials, or changes in the work, or both, shall be ordered in writing by the City Engineer, and the concurrence of the City Council shall not be necessary. All reasonable expenses of such procurement incurred by the City Engineer shall be defrayed by the Contractor; or

- ii. If such materials or labor cannot be procured through legitimate channels within sixty (60) days after the filing of the aforesaid notice, either Party may, upon thirty (30) days' written notice to the other, terminate this agreement. In such event, Contractor shall be compensated for all work executed upon a unit basis in proportion to the amount of the work completed, or upon a cost-plus-ten-percent (10%) basis, whichever is the lesser. Materials on the ground, in process of fabrication or in route upon the date of notice of termination specially ordered for the Project and which cannot be utilized by Contractor, shall be compensated for by City at cost, including freight, provided Contractor shall take all steps possible to minimize this obligation; or
- iii. The City Council, by resolution, may suspend the Contract until the cause of inability to perform is removed for a period of not to exceed sixty (60) days.

If the Contract is not canceled, and the inability of Contractor to perform continues without fault on Contractor's part, beyond the time during which the Contract may have been suspended, as herein above provided, the City Council may further suspend the Contract, or either Party hereto may, without incurring any liability, elect to declare the Contract terminated upon the ground of impossibility of performance. In the event City declares this agreement terminated, such declaration shall be authorized by the City Council by resolution, and Contractor shall be notified in writing thereof within five (5) days after the adoption of such resolution. Upon such termination, Contractor shall be entitled to proportionate compensation at the Contract Price for such portion of the Contract as may have been performed; or

- iv. City may terminate the Contract, in which case Contractor shall be entitled to proportionate compensation at the agreed rate for such portion of the Contract as may have been performed. Such termination shall be authorized by resolution of the City Council. Notice thereof shall be forthwith given in writing to Contractor, and the Contract shall be terminated upon receipt by Contractor of such notice.

In the event of the termination provided in this sub-paragraph (iv), none of the covenants, conditions or provisions hereof shall apply to the Services not performed, and City shall be liable to Contractor for the proportionate compensation last herein mentioned.

(d) *Delay Damages.* In the event Contractor, for any reason, fails to perform the Services to the satisfaction of the City Engineer by the Substantial Completion Due Date, City may, in accordance with Section 7203 of the Public Contract Code, in lieu of any other of its rights authorized by Section 6 of this agreement, deduct from payments or credits due Contractor after such breach a sum equal to **One Thousand Five Hundred** and no/100ths Dollars (**\$1,500.00**) for each calendar day beyond the Substantial Completion Due Date. Upon Substantial Completion of the work, and in the event Contractor, for any reason, fails to perform the Services to the satisfaction of the City Engineer by the Final Completion Due Date, City may, in accordance with Section 7203 of the Public Contract Code, in lieu of any other of its rights authorized by Section 6 of this agreement, deduct from payments or credits due Contractor after such breach a sum equal to **Five Hundred** and no/100ths Dollars (**\$500.00**) for each calendar day beyond the Final Completion Due Date. This deduction shall not be considered a penalty but shall be considered as delay damages. The aforementioned rate of deduction is an amount agreed to by the Parties as reasonably representing additional construction engineering costs incurred by City if Contractor fails to complete the Services by the Substantial and Final Completion Due Dates. However, any deduction assessed as delay damages shall not relieve Contractor from liability for any damages or costs resulting from delays to other contractors on the project or other projects caused by a failure of the assessed Contractor to complete the Services by the Substantial and Final Completion Due Dates. Due account shall be taken of any time extensions granted to Contractor by City. Permitting Contractor to continue work beyond the Substantial and Final Completion Due Dates shall not operate as a waiver on the part of City of any of its rights under the Contract nor shall it relieve Contractor from liability for any damages or costs resulting from delays to other contractors on the project or other projects caused by a failure of the assessed Contractor to complete the Services by the Substantial and Final Completion Due Dates.

6. Termination.

(a) *Option of City to Terminate Contract for Failure to Complete Services.* If a Party should fail to perform any of its obligations hereunder within the time and in the manner herein provided, or otherwise violates any of the terms of the Contract (the "Defaulting Party"), the other Party shall give notice to the Defaulting Party and allow the Defaulting Party ten (10) days to correct such deficiency. If the Defaulting Party does not correct such deficiency, the other Party may immediately terminate the Contract by giving written notice of such termination, stating the reason for such termination. In such event, Contractor shall be entitled to receive payment for all Services satisfactorily rendered until such termination, provided, however, there shall be deducted from such amount the amount of damage, if any, sustained by virtue of any breach of the Contract by Contractor, including Delay Damages. If payment under the Contract is based upon a lump sum in total or by individual task, payment for Services satisfactorily rendered shall be an amount which bears the same ratio to the total fees specified in this Agreement as the Services satisfactorily rendered hereunder by Contractor to the total services

otherwise required to be performed for such total fee, provided, however, that there shall be deducted from such amount the amount of damage, if any sustained by City by virtue of any breach of the Contract by Contractor. Upon termination, Contractor shall deliver copies of all Work Product, as defined in Section 19 of this Agreement, to City. If District terminates the Contract before Contractor commences any Services hereunder, City shall not be obligated to make any payment to Contractor.

(b) If Contractor should be adjudged bankrupt or if it should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of its insolvency, or if it or any of its subcontractors should violate any of the provisions of the Contract, City may serve written notice upon it and its surety of its intention to terminate the Contract. Such notice shall contain the reasons for City's intention to terminate the Contract, and unless such violations shall cease within five (5) calendar days after serving of such notice, the Contract shall cease and terminate upon the expiration of said five (5) calendar days. In the event of any such termination, City shall immediately serve written notice thereof upon the surety and Contractor, and the surety shall have the right to take over and perform the Contract; provided however, that, if the surety does not give City written notice of its intention to take over and perform the Contract or does not commence performance thereof within thirty (30) calendar days from the date of the service of such notice, City may take over the work and prosecute the same to completion by contract or any other method it may deem advisable, for the account and at the expense of Contractor, and Contractor and its surety shall be jointly liable to City for any excess cost occasioned City thereby, and in such event City may, without liability for so doing, take possession of and utilize in completing the work, such materials, appliances, and other property belonging to Contractor as may be on the Project site and necessary thereof.

7. Liability for Breach: Neither Party waives the right to recover direct damages against the other for breach of the Contract, including any amount necessary to compensate City for all detriment proximately caused by Contractor's failure to perform its obligations hereunder or which in the ordinary course of things would be likely to result therefrom. City reserves the right to offset such damages against any payments owed to Contractor. City shall not, in any manner, be liable for special or consequential damages, including but not limited to Contractor's actual or projected lost profits had Contractor completed the Services required by the Contract. In the event of termination by either Party, copies of all finished or unfinished Work Product, as defined in Section 19 of this Agreement, shall become the property of City. Notwithstanding the foregoing, in no event shall City be liable, regardless of whether any claim is based on contract or tort, for any special, consequential, indirect or incidental damages, including, but not limited to, lost profits or revenue, arising out of or in connection with the Contract or the Services performed in connection with the Contract.

8. Compensation: City shall make payments to Contractor in accordance with the provisions of Section 9 of the City Standards in legally executed and regularly issued warrants of City, drawn on the appropriate fund or funds as required by law and order of the City Council thereof. Contractor shall be administered a progress payment approximately every thirty (30) calendar days from the time work begins according to the payment schedule furnished by the City Engineer at the time work begins. Contractor shall provide access at all reasonable times to all reports, contract records, contract documents, contract files, and personnel necessary to audit and verify Contractor's charges to City under this Contract.

Monthly progress payments in the amount of 95 percent (95%) of the value of the work will be made to Contractor based on the Contractor's estimate and the schedule of prices contained in the accepted bid. The remaining 5 percent (5%) will be retained by City as partial security for the fulfillment of the Contract except that at any time after 50 percent (50%) of the work has been completed, if the City Engineer finds that satisfactory progress is being made and the Project's critical path of work are on

schedule, City may discontinue any further retention. Such discontinuance will only be made upon the written request of Contractor. City may, at any time the City Engineer finds that satisfactory progress is not being made, again institute retention of 5 percent (5%) as specified above. Payment will be made as soon as possible after the preparation of the Contractor's estimate. City shall pay the remaining 5 percent (5%) of the value of the Services completed under this Contract, if unencumbered by retentions for claims, not sooner than the expiration of thirty-five (35) calendar days from the date of recordation of the Notice of Completion, pursuant to Section 2 of this agreement, and not later than sixty (60) days from the "completion" of the Services as said term is defined in Public Contract Code section 7107(c).

No estimate or payment shall be made if, in the judgment of the City Engineer, the work is not proceeding in accordance with the provisions of the Contract, or when, in his judgment, the total value of the work done since the last estimate amounts to less than \$1,000. No progress payments will be made if the time allotted for the job is thirty (30) working days or less. Payment of any progress payment, or the acceptance thereof by Contractor, shall not constitute acceptance of the work performed under this Contractor, or any portion thereof, and shall in no way reduce the liability of Contractor to replace unsatisfactory work or materials, though the unsatisfactory character of such work or materials may not have been apparent or detected at the time such payment was made.

Additionally, as a precondition to City's progress payments hereunder, Contractor shall provide to City, prior to payment, unconditional waivers and releases of stop notices pursuant to Civil Code section 8128 et seq. from each subcontractor and materials supplier. The form of said waivers and releases shall be as set forth in Civil Code section 3262(d)(2).

Pursuant to Public Contract Code section 22300 et seq., Contractor may request the right to substitute securities for any moneys withheld by City to ensure the performance required of Contractor under the Contract, or that City make payment of retentions earned directly into an escrow account established at the expense of Contractor.

9. Disputes Pertaining to Payment for Work: Should any dispute arise respecting the true value of any work performed, of any work omitted, or of any extra work which Contractor may be required to do, or respecting the size of any payment to Contractor during the performance of the Contract, such dispute shall be decided by the City Engineer, and the decision of the latter shall be final and conclusive. The Parties agree to comply with the claims resolution procedures set forth in Public Contract Code section 9204 when applicable.

(a) *Claims Processing.* Any submission of a claim by Contractor must comply with the requirements of Public Contract Code section 9204. Upon receipt of a claim pursuant to this section, City shall conduct a reasonable review of the claim and, within a period not to exceed forty-five (45) days, shall provide Contractor a written statement identifying what portion of the claim is disputed and what portion is undisputed. Upon receipt of a claim, the Parties may, by mutual agreement, extend the time period provided in this subdivision. Contractor shall furnish reasonable documentation to support the claim. Any payment due on an undisputed portion of the claim shall be processed and made within sixty (60) days after City issues its written statement. If Contractor disputes City's written response, or if City fails to respond to a claim issued pursuant to this section within the time prescribed, Contractor may demand in writing an informal conference to meet and confer for settlement of the issues in dispute.

(b) *Meet-and-Confer Conference.* Upon receipt of a demand in writing sent by registered mail or certified mail, return receipt requested, City shall schedule a meet-and-confer conference within thirty (30) days for settlement of the dispute. Within ten (10) business days following the conclusion

of the meet-and-confer conference, if the claim or any portion of the claim remains in dispute, City shall provide the claimant a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within sixty (60) days after the City issues its written statement.

(c) *Nonbinding Mediation.* Any disputed portion of the claim, as identified by Contractor in writing, shall be submitted to nonbinding mediation, with the Parties sharing the associated costs equally. The Parties shall mutually agree to a mediator within ten (10) business days after the disputed portion of the claim has been identified in writing. If the Parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each Party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator. If mediation is unsuccessful, the parts of the claim remaining in dispute shall be subject judicial review pursuant to Section 23 of this Agreement.

Notwithstanding any claim, dispute, or other disagreement between the Parties regarding performance under the Contract, the scope of work hereunder, or any other matter arising out of or related to, in any manner, the Contract, Contractor shall proceed diligently with performance of the Services in accordance with City's written direction, pending any final determination or decision regarding any such claim, dispute, or disagreement.

10. Permits and Care of Work: Contractor shall, at Contractor's expense, obtain all necessary permits and licenses for the construction of each improvement, give all necessary notices and pay all fees and taxes required by law, except those City fees set forth in Section 1 of the Special Provisions. Contractor has examined the Project site and is familiar with its topography and condition, location of property lines, easements, building lines, and other physical factors and limitations affecting the performance of the Contract. Contractor, at Contractor's expense, shall obtain any permission necessary for any operations conducted off the property owned or controlled by City. Contractor shall be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance.

11. Public Works and Payment of Prevailing Wage:

(a) *Monitoring and Enforcement.* In accordance with the provisions of Sections 1725.5, 1771.1, 1771.3, and 1771.4 of the Labor Code, all work performed under the Contract is subject to compliance monitoring and enforcement by the Department of Industrial Relations (“DIR”). All work performed by Contractor or its subcontractors under the Contract is subject to the requirements of Labor Code section 1720 et seq. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 of the Labor Code at the time the contract is awarded. Contractor and its subcontractors shall furnish the records specified in Section 1776 of the Labor Code directly to the Labor Commissioner, at least monthly, in the format prescribed by the Labor Commissioner.

In accordance with the provisions of Section 1773.3 of the Labor Code, City shall provide notice to DIR of the award of this Contract within thirty (30) working days of the award. The notice shall be transmitted electronically in a format specified by DIR and shall include the name of Contractor, any subcontractor listed on the successful bid, the bid and contract award dates, the contract amount, the

estimated start and completion dates, Project location, and any additional information DIR specifies that aids in the administration and enforcement of Section 1720 et seq. of the Labor Code.

(b) *Wages & Hours of Employment:* In the performance of the Services under the Contract, eight (8) hours shall be the maximum hours of labor on any calendar day, and the minimum wages of compensation of persons performing labor in the execution of this agreement shall be the current prevailing scale of wages determined by DIR for the community. Contractor shall forfeit as penalty Twenty-five and no/100ths Dollars (\$25.00) to be paid to City for each workman employed in the execution of the Contract by Contractor or its subcontractor(s), for each calendar day during which any workman is required or permitted to labor more than eight (8) hours, in violation of provisions of Labor Code section 1810 et seq. Contractor shall post prevailing wage rates at the Project no later than the first day Contractor commences performance of the Services under the Contract.

12. Superintendence by Contractor: Contractor shall give personal superintendence to the work on the Project or have a competent foreman or superintendent satisfactory to the City Engineer on the Project at all times during construction and performance of work under the Contract, with authority to act for Contractor.

13. Inspection and Testing by City: Contractor shall at all times maintain proper facilities and provide safe access for inspection by City to all parts of the work performed on the Project and to the shops wherein the work is in preparation. Contractor shall notify City with sufficient time in advance of the manufacture of production materials to be supplied by Contractor under the Contract in order for City to arrange for mill or factory inspection and testing of same. Any materials shipped by Contractor from factory prior to having satisfactorily passed such testing and inspection by City's representative or prior to the receipt of notice from such representative that such testing and inspection will not be required shall not be incorporated on the Project. Contractor shall also furnish to City, in triplicate, certified copies of all factory and mill test reports upon request.

14. Conformity with Law and Safety: Contractor shall observe and comply with all applicable laws, ordinances, codes, and regulations of governmental agencies, including federal, state, municipal, and local governing bodies having jurisdiction over any or all of the scope of Services, including all provisions of the Occupational Safety and Health Act of 1979 as amended, all California Occupational Safety and Health Regulations, the California Building Code, the American with Disabilities Act, any copyright, patent, or trademark law, and all other applicable federal, state, municipal, and local safety regulations, appropriate trade association safety standards, and appropriate equipment manufacturer instructions. All Services performed by Contractor or its subcontractors must be in accordance with these laws, ordinances, codes, and regulations. Contractor's failure to comply with any laws, ordinances, codes, or regulations applicable to the performance of the Services hereunder shall constitute a breach of contract. In cases where standards conflict, the standard providing the highest degree of protection shall prevail.

If a death, serious personal injury or substantial property damage occurs in connection with the performance of the Contract, Contractor shall immediately notify City's risk manager by telephone. If any accident occurs in connection with the Contract, Contractor shall promptly submit a written report to City, in such form as City may require. This report shall include the following information: (a) name and address of the injured or deceased person(s); (b) name and address of Contractor's subcontractor, if any; (c) name and address of Contractor's liability insurance carrier; and (d) a detailed description of the accident, including whether any of City's equipment, tools, or materials were involved.

If a release of a hazardous material, substance, or waste occurs in connection with the performance of the Contract, Contractor shall immediately notify City. Contractor shall not store hazardous materials or hazardous waste within City limits without a proper permit from City.

15. Other Contracts: City may award other contracts for additional work on the Project, and Contractor shall fully cooperate with such other contractors and carefully fit Contractor's own work to that provided under other contracts as may be directed by the City Engineer. Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractor.

16. Bonds: Concurrently with the execution hereof, Contractor shall furnish, on the forms provided herein as **Exhibits D and E**, respectively, corporate surety bonds to the benefit of City, issued by a surety company acceptable to City and authorized and admitted to do business in the state of California, as follows:

(a) *Faithful Performance Bond.* In an amount equal to at least one hundred percent (100%) of the Contract Price as security for the faithful performance of the Contract. The bond shall contain a provision that the surety thereon waives the provisions of Sections 2819 and 2845 of the Civil Code.

(b) *Payment Bond.* In an amount equal to at least one hundred percent (100%) of the Contract Price as security for the payment of all persons performing labor and furnishing materials in connection with the Contract. The bond shall be in accordance with the provisions of Sections 3225, 3226, and 3247 through 3252, inclusive, of the Civil Code and Section 13020 of the Unemployment Insurance Code of California. Said bond shall also contain a provision that the surety thereon waives the provisions of Sections 2819 and 2845 of the Civil Code.

The surety companies shall familiarize themselves with all provisions and conditions of the Contract. It is understood and agreed that the surety or sureties waive the right of special notification of any modification or alterations, omissions or reductions, extra or additional work, extensions of time, or any other act or acts by City or its authorized agents under the terms of this Contract and failure to so notify the surety or sureties of such changes shall in no way relieve the surety or sureties of their obligations under the Contract.

17. Indemnification:

(a) *Indemnity for Professional Liability.* When the law establishes a professional standard of care for Contractor's Services, to the fullest extent permitted by law, Contractor shall indemnify, protect, defend, and hold harmless City and any and all of its elective and appointive boards, officers, officials, agents, employees or volunteers ("City's Agents") from and against any and all losses, liabilities, damages, costs, and expenses, including legal counsel's fees and costs but only to the extent Contractor or its subcontractors are responsible for such damages, liabilities and costs on a comparative basis of fault between Contractor or its subcontractors and City in the performance of professional services under the Contract. Contractor shall not be obligated to defend or indemnify City for City's own negligence or for the negligence of others.

(b) *Indemnity for other than Professional Liability.* Other than in the performance of professional services and to the full extent permitted by law, Contractor shall indemnify, defend, and hold harmless City and any and City's Agents from and against any liability, including liability for claims, suits, actions, arbitration proceedings, administrative proceedings,

regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, including legal counsel's fees and costs, court costs, interest, defense costs, and expert witness fees, where the same arise out of, are a consequence of, or are in any way attributable to, in whole or in part, the performance of the Contract by Contractor or by any individual or agency for which Contractor is legally liable, including, but not limited to, officers, agents, employees, or subcontractors of Contractor.

18. Contractor's Insurance: Concurrently with the execution hereof, Contractor shall furnish City with satisfactory proof of carriage of the insurance required under this section, and that Contractor shall give City at least thirty (30) days prior notice of the cancellation of any policy during the Term of this contract. Contractor shall not commence work under this Agreement until Contractor has obtained City's approval regarding all insurance requirements, forms, endorsements, amounts, and carrier ratings, nor shall Contractor allow any subcontractor to commence work on a subcontract until all similar insurance required of the subcontractor shall have been so obtained and approved. Contractor shall procure and maintain for the duration of the Contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Services hereunder by Contractor, its agents, representatives, employees or subcontractors. Failure to maintain or renew coverage or to provide evidence of renewal may constitute a material breach of the Contract. Any available insurance proceeds in excess of the specified minimum limits and coverage shall be available to City.

(a) *Commercial General Liability Insurance.* Contractor shall maintain commercial general liability insurance with coverage at least as broad as Insurance Services Office form CG 00 01, in an amount not less than Two Million Dollars (\$2,000,000.00) per occurrence, Four Million Dollars (\$4,000,000.00) general aggregate, and Two Million Dollars (\$2,000,000) products and completed operations aggregate for bodily injury, personal injury, and property damage, including, without limitation, blanket contractual liability and coverage for explosion, collapse, and underground property damage hazards. The policy shall contain, or be endorsed to contain, the following provisions:

- (1) City, its elective and appointive boards, officers, agents, employees, and volunteers are to be covered as additional insureds with respect to liability arising out of work or operations performed by or on behalf of Contractor, including materials, parts or equipment furnished in connection with such work or operations. The coverage shall be provided in the form of an endorsement to Contractor's insurance (at least as broad as CG 20 10 for ongoing operations and CG 20 37 for products/completed operations).
- (2) For any claims related to the Project, Contractor's insurance coverage shall allow and be endorsed primary insurance as respects City and any insurance or self-insurance maintained by City shall be excess of Contractor's insurance and shall not contribute with it.
- (3) In the event of cancellation, non-renewal, or material change that reduces or restricts the insurance coverage afforded to City under the Contract, the insurer, broker/producer, or Contractor shall provide City with thirty (30) days' prior written notice of such cancellation, non-renewal, or material change.

- (4) Coverage shall not extend to any indemnity coverage for the sole negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

(b) *Workers' Compensation Insurance.* Contractor shall maintain Workers' Compensation Insurance (Statutory Limits) and Employer's Liability Insurance with limits of at least One Million Dollars (\$1,000,000.00) each accident, One Million Dollars (\$1,000,000) by disease-policy limit, and One Million Dollars (\$1,000,000) by disease-each employee.

(c) *Commercial Auto Insurance.* Contractor shall maintain commercial auto liability coverage for owned, non-owned, and hired autos using ISO Business Auto Coverage form CA 00 01, or the exact equivalent, with a limit of no less than Two Million Dollars (\$2,000,000.00) per accident. The policy shall provide and be endorsed that the City, its officials, officers, agents, employees, and volunteers are included or named as additional insureds. If Contractor owns no vehicles, this requirement may be met through a non-owned auto coverage or an endorsement to the CGL policy.

(d) *Builder's Risk Insurance.* Upon commencement of construction and with approval of City, Contractor shall obtain and maintain Builder's Risk/Course of Construction insurance. The policy shall be provided for replacement value on an "all-risk" basis. City shall be named as Loss Payee on the policy and there shall be no coinsurance penalty provision in any such policy. The policy must include: (1) coverage for removal of debris and insuring the buildings, structures, machinery, equipment, materials, facilities, fixtures, and all other properties constituting a part of the project; (2) coverage with limits sufficient to insure the full replacement value of any property or equipment stored either on or off the project site, whether provided from within a Builder's Risk policy or through the addition of an Installation Floater. Such insurance shall be on a form acceptable to City to ensure adequacy of terms and limits. Contractor shall not be required to maintain property insurance for any portion of the Project following transfer of control thereof to City.

(e) *Contractors Pollution Insurance.* [Intentionally Omitted]

(f) *Professional Liability Insurance.* [Intentionally Omitted]

(g) *Umbrella or Excess Policy.* Contractor may use Umbrella or Excess Policies to provide the liability limits as required in this agreement. This form of insurance will be acceptable provided that all of the Primary and Umbrella or Excess Policies shall provide all of the insurance coverages herein required. The Umbrella or Excess policies shall be provided on a true "following form" or broader coverage basis, with coverage at least as broad as provided on the underlying Commercial General Liability and Automobile Liability insurance. No coverage or insurance policies maintained by the Additional Insureds, whether primary or excess, and which also apply to a loss covered hereunder, shall be called upon to contribute to a loss until the Contractor's primary and excess liability policies are exhausted.

(h) *Deductibles and Self-Insured Retentions.* Upon request of City, any deductibles or self-insured retentions must be declared to and approved by City. At the option of City, either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects City and City's Agents; or (2) Contractor shall provide a financial guarantee

satisfactory to City guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

(i) *Acceptability of Insurers.* Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-:VII or with an insurer to which City has provided prior approval.

(j) *Verification of Coverage.* Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this Section 18. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right, at any time, to require complete, certified copies of all required insurance policies and endorsements.

(k) *Waiver of Subrogation.* With the exception of professional liability, Contractor hereby agrees to waive subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. The commercial general liability policy, automobile liability policy, and workers' compensation policy shall be endorsed to contain a waiver of subrogation in favor of City for all work performed by Contractor, its agents, employees, independent contractors and subcontractors. Contractor shall provide written proof of waiver of subrogation in the Certificate of Insurance. Additionally, Contractor agrees to obtain any available endorsements that may be necessary to effectuate this waiver of subrogation.

(l) *Subcontractors.* Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

19. Ownership of Work Product: Any and all work, artwork, copy, posters, billboards, photographs, videotapes, audiotapes, systems designs, software, reports, designs, specifications, drawings, diagrams, surveys, source codes, professional or technical information or data, photographs, notes, letters, emails, or any original works of authorship created by contractor or its subcontractors or subcontractors in connection with Services performed under the Contract ("Work Product") shall be works for hire as defined under Title 17 of the United States Code, and all copyrights in such works are the property of City. In the event that it is ever determined that any Work Product created by Contractor or its subcontractors or subcontractors under the Contract are not works for hire under U.S. law, Contractor hereby assigns all copyrights to such Work Product to City. With the prior written approval of the City Engineer, Contractor may retain and use copies of such Work Product for reference and as documentation of its experience and capabilities.

All Work Product shall become the property of City irrespective of where located or stored and Contractor agrees to deliver all such documents and information to City, without charge and in whatever form it exists, upon the Final Completion Date, as may be extended. Contractor shall have no ownership interest in such Work Product.

All Work Product of Contractor under the Contract, including written information which City will cause to be distributed for either internal or public circulation, including both preliminary and final drafts, shall be delivered to City in both printed and electronic form, or as may be specific in Exhibit A.

When the Contract is terminated, Contractor agrees to return to City all documents, drawings, photographs, and other written or graphic material, however produced, that it received from City or City's Agents, in connection with the performance of its Services under the Contract. All materials shall be returned in the same condition as received.

20. Taxes: Payment of any taxes, including California sales and use taxes, levied upon the Contract, the transaction, or the Services or goods delivered pursuant hereto, shall be the obligation of Contractor. Contractor shall cooperate with City to the full extent possible to maximize the local allocation of California sales and use tax to City. Such cooperation shall include, but not be limited to:

(a) *Use Tax Direct Payment Permits.* Contractor shall apply for, obtain, and utilize, to the maximum extent reasonable, a California Use Tax Direct Payment Permit.

(b) *Purchases of \$500,000 or More.* Contractor shall require vendors and suppliers located outside California from whom Contractor makes purchases of \$500,000 or more to allocate the use tax to City.

21. Independent Contractor: At all times during the Term of the Contract, Contractor shall be deemed to be an independent contractor and shall be wholly responsible for the manner in which Contractor performs the Services required under the Contract. Contractor shall be liable for its acts and omissions, and those of its employees, contractors, subcontractors, representatives, volunteers, and its agents. Nothing contained herein shall be construed as creating an employment, agency, or partnership relationship between City and Contractor. City shall have the right to control Contractor only insofar as the result of Contractor's Services rendered pursuant to the Contract; however, City shall not have the right to control the means by which Contractor accomplishes Services rendered pursuant to the Contract.

22. Contractor Not Agent: Except as City may specify in writing, Contractor shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Contractor shall have no authority, express or implied, pursuant to the Contract to bind City to any obligation whatsoever.

23. Arbitration of Disputes: All claims, disputes, and other matters in question between City and Contractor arising out of, or relating to, this Contract or the breach thereof, including claims of Contractor for extra compensation of Services related to the project, shall be decided by arbitration before a single arbitrator in accordance with the provisions of Sections 1281 through 1284.2 of the Code of Civil Procedure (the "Arbitration Laws") unless the Parties mutually agree otherwise. The provisions of Section 1283.05 of the Arbitration Laws apply to any arbitration proceeding except as otherwise provided in the Contract. The arbitrator shall have authority to decide all issues between the Parties including, but not limited to, claims for extras, delay, and liquidated damages, if any, provided for the Contract, matters involving defects in the Services performed by Contractor or its subcontractors, rights to payment, and whether the necessary procedures for arbitration have been followed. The award rendered by the arbitrator shall be final and judgment may be entered upon it in accordance with applicable law in any court having competent jurisdiction thereof.

Notice of the demand for arbitration shall be filed in writing with the other Party. The demand for arbitration shall be made within a reasonable time after the claim, dispute, or other matter in question has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such claim, dispute, or other matter in question would be barred by the applicable statute of limitations.

The parties shall jointly appoint an arbitrator within fifteen (15) calendar days of the date of giving the notice of the demand for arbitration. If the Parties are unable to jointly agree upon the appointment of an arbitrator within said fifteen (15) calendar day period, and do not agree in writing to extend said period for a fixed period, then either Party may seek to have the arbitrator appointed by the Superior Court of Stanislaus County in accordance with the Arbitration Laws.

If any proceeding is brought to contest the right to arbitrate and it is determined that such right exists, the losing Party shall pay all costs and attorney's fees incurred by the prevailing Party.

In addition to the other rules of law which may be applicable to any arbitration hereunder, the following shall apply:

- (a) Promptly upon the filing of the arbitration, each Party shall be required to set forth in writing and to serve upon each other Party a detailed statement of its contentions of fact and law.
- (b) All Parties to the arbitration shall be entitled to the discovery procedures provided under Section 1283.05 of the California Code of Civil Procedure.
- (c) The arbitration shall be commenced and conducted as expeditiously as possible consistent with affording reasonable discovery as provided herein.
- (d) These additional rules shall be implemented and applied by the arbitrator.

The costs of arbitration shall be borne by the Parties as determined by the arbitrator, but each Party shall bear its own attorney's fees associated with the dispute with the other Party and to the arbitration.

All administrative remedies required under Section 9 of this Agreement or pursuant to Public Contract Code section 9204, or required by any other law, shall be exhausted prior to commencement of any arbitration under this Section 23.

24. Provisions Cumulative: The provisions of the Contract are cumulative, and in addition to and not in limitation of, any other rights or remedies available to City.

25. Notices: All notices shall be in writing and delivered in person or transmitted by certified mail, postage prepaid. Any Party hereto may at any time, by giving ten (10) days' written notice to the other Party hereto, designate any other address in substitution of the address to which such notice or communication shall be given. Such notices or communications shall be given to the Parties at their addresses set forth below.

If to City:

**City of Turlock
Attn: City Engineer
156 S. Broadway, Suite 150
Turlock, CA 95380-5461**

With courtesy copies to:

**City of Turlock, City Attorney's Office
Attn: George A. Petrulakis, City Attorney**

**156 S. Broadway, Suite 230
Turlock, CA 95380-5456**

If to Contractor:

If to Contractor's Sureties:

26. City Contract Administrator: The City's contract administrator and contact person for this Agreement is:

Charlotte Calvario
City of Turlock Engineering Division
156 S. Broadway, Suite 150
Turlock, California 95380-5461
Telephone: (209) 668-6029
E-mail: ccalvario@turlock.ca.us

27. Interpretation: As used herein, any gender includes each other gender, the singular includes the plural and vice versa.

28. Antitrust Claims: Contractor or its subcontractors offer and agree to assign to City all rights, title, and interest to any causes of action under Section Four of the Clayton Act and the Cartwright Act concerning antitrust claims.

29. Use of City Project Number: Contractor or its subcontractors agree to use the aforementioned City project number on all maps, drawings, submittals, billing, and written correspondence that involve City staff or contracted consultants. Nothing in this section shall preclude Contractor or its subcontractors from using their own project numbers for their own internal use.

30. No Conflict of Interest: Contractor represents that no conflict of interest will be created under state or federal law by entering into or in carrying out the Contract.

31. Confidentiality: Contractor understands and agrees that, in the performance of Services under the Contract, or in the contemplation thereof, Contractor may have access to private or confidential information that may be owned or controlled by City and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to City ("Confidential Information"). Contractor shall not, either during or after the Term, disclose to any third party any Confidential Information without the prior written consent of City. If City gives Contractor written authorization to make any such disclosure, Contractor shall do so only within the limits and to the extent of that authorization. Contractor may be directed or advised by the City Attorney on various matters relating to the performance of Services on the Project or on other matters pertaining to the Project, and

in such event, Contractor agrees that it will treat all communications between itself, its employees, and its subcontracts as being communications which are within the attorney-client privilege.

32. Modification. No alteration, amendment, modification, or termination of the Contract shall be valid unless made in writing and executed by all Parties to the Contract.

33. Waiver: No covenant, term, or condition or the breach thereof shall be deemed waived, except by written consent of the Party against whom the waiver is claimed, and any waiver of the breach of any covenant, term, or condition shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other covenant, term, or condition.

34. Assignment: No Party to the Contract shall assign, transfer, or otherwise dispose of this Agreement in whole or in part to any individual, firm, or corporation without the prior written consent of the other Party. Subject to the foregoing provisions, the Contract shall be binding upon, and inure to the benefit of, the respective successors and assigns of the Parties hereto.

35. Authority: All Parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement and the names, titles, and capacities herein stated on behalf of any entities, persons, states, or firms represented or purported to be represented by such entities, person, states, or firms and that all former requirements necessary or required by state or federal law in order to enter into the Contract have been fully complied with. Further, by entering into this Agreement, neither Party hereto shall have breached the terms or conditions of any other contract or agreement to which such Party is obligated, which such breach would have a material effect hereon.

36. Governing Law: The Contract shall be governed and construed in accordance with the laws of the state of California.

37. Severability: If the Contract in its entirety is determined by an arbitrator or a court of competent jurisdiction to be invalid or unenforceable, the Contract shall automatically terminate as of the date of final entry of judgment. If any provision of the Contract shall be determined to be invalid and unenforceable, or if any provision of the Contract is rendered invalid or unenforceable according to the terms of any federal or state statute, which becomes effective after the Effective Date of this Agreement, the remaining provisions shall continue in full force and effect and shall be construed to give effect to the intent of this Agreement.

38. Execution and Counterparts: This Agreement may be executed simultaneously and, in several counterparts, each of which shall be deemed an original but together shall constitute one and the same instrument. The Parties agree that this Agreement and any other documents to be delivered in connection herewith may be electronically signed utilizing services such as DocuSign and Nitro Sign, or by transmitting signatures in pdf or similar format, and that any electronic signatures appearing on this Agreement or such other documents are the same as handwritten signatures for the purposes of validity, enforceability, and admissibility.

39. Mandatory and Permissive: “Shall” and “will” and “agrees” are mandatory. “May” and “can” are permissive.

40. Headings: Headings used in this Agreement are for reference purposes only and shall not be considered in construing this Agreement.

41. Attorney's Fees and Costs: Except as expressly provided for in Section 23 of this Agreement, if any action at law or in equity, including action for declaratory relief, is brought to enforce or interpret the provisions of the Contract, the prevailing Party shall be entitled to reasonable attorney's fees and costs, which may be set by the court in the same action or in a separate action brought for that purpose, in addition to any other relief to which such Party may be entitled.

42. Necessary Acts and Further Assurances: The Parties shall, at their own cost and expense, execute and deliver such further documents and instruments and shall take such other actions as may be reasonably required or appropriate to evidence or carry out the intent and purposes of the Contract.

43. Recitals: The recitals set forth above ("Recitals") are true and correct and are hereby incorporated into and made part of this Agreement by this reference. In the event of any inconsistency between the Recitals and Section 1 through 43 of this Agreement, Sections 1 through 43 shall prevail.

[Signatures on Following Page]

IN WITNESS WHEREOF, two identical counterparts of this agreement, consisting of a total of ____ pages, each of which counterparts shall for all purposes be deemed an original of said agreement, have been duly executed by the parties hereinabove named, on the day and year first herein above written.

CONTRACTOR

By: _____

Print Name

Address: _____

Phone: _____

Date: _____

Federal Tax ID or Social Security No:

DIR Registration Number:

Affix Contractor's Seal Here

CITY OF TURLOCK, a municipal corporation

By: _____
Susan E. Borrego, Interim City Manager

Date: _____

APPROVED AS TO SUFFICIENCY:

By: _____
William D. Morris, RCE, PLS, City Engineer

By: _____
Christopher Fisher, Municipal Services
Director

APPROVED AS TO FORM:

By: _____
George A. Petrulakis, City Attorney

ATTEST:

By: _____
Nichole Fiez, City Clerk

EXHIBIT A
CONTRACTOR'S PROPOSAL FOR SERVICES

EXHIBIT B

PAYMENT BY FORCE ACCOUNT

For work paid by force account, the City Engineer compares City's records to Contractor's daily force account work report. When the City Engineer and Contractor agree on the contents of the daily force account work reports, the City Engineer accepts the report and City pays for the work. If the records differ, City pays for the work based only on the information shown on City's records. If a subcontractor performs work at force account, work paid at force account will be accepted at an additional 2 percent (2%) markup to the total cost of that work, including markups, as reimbursement for additional administrative costs. The markups specified in labor, materials, and equipment includes compensation for all delay costs, overhead costs, and profit. If an item's unit price is adjusted for work-character changes, City excludes Contractor's cost of determining the adjustment. Payment for owner-operated labor and equipment is made at the market-priced invoice submitted.

A. Labor. Labor payment is full compensation for the cost of labor used in the direct performance of the work plus a fifteen percent (15%) markup, as set forth below, and consistent with California Labor Code section 1770 et seq. Force account labor payment consists of:

1. Employer payment to the worker for:
 - 1.1 Basic hourly wage
 - 1.2 Health and welfare
 - 1.3 Pension
 - 1.4 Vacation
 - 1.5 Training
 - 1.6 Other State and federal recognized fringe benefit payments
2. Labor surcharge percentage in *Labor Surcharge and Equipment Rental Rates* current during the work paid at force account for:
 - 2.1 Workers' compensation insurance
 - 2.2 Social security
 - 2.3 Medicare
 - 2.4 Federal unemployment insurance
 - 2.5 State unemployment insurance
 - 2.6 State training taxes
3. Subsistence and travel allowances paid to the workers
4. Employer payment to supervisors, if authorized

The fifteen percent (15%) markup consists of payment for all overhead costs related to labor but not designated as costs of labor used in the direct performance of the work including:

- (a) Home office overhead
- (b) Field office overhead
- (c) Bond costs
- (d) Profit

- (e) Labor liability insurance
- (f) Other fixed or administrative costs that are not costs of labor used in the direct performance of the work

B. Materials. Material payment is full compensation for materials the Contractor furnishes and uses in the work. The City Engineer determines the cost based on the material purchase price, including delivery charges, except:

1. A fifteen percent (15%) markup is added;
2. Supplier discounts are subtracted whether the Contractor takes them or not;
3. If the City Engineer believes the material purchase prices are excessive, City pays the lowest current wholesale price for a similar material quantity;
4. If Contractor procured the materials from a source Contractor wholly or partially own, the determined cost is based on the lower of the:
 - 4.1 Price paid by the purchaser for similar materials from that source on Contract items; and
 - 4.2 Current wholesale price for those materials;
5. If Contractor does not submit a material cost record within thirty (30) days of billing, the determined cost is based on the lowest wholesale price:
 - 5.1 During that period
 - 5.2 In the quantities used

C. Equipment Rental. Equipment rental payment is full compensation for:

1. Rental equipment costs, including moving rental equipment to and from the change order work site using its own power.
2. Transport equipment costs for rental equipment that cannot be transported economically using its own power. No payment is made during transport for the transported equipment.
3. Fifteen percent (15%) percent markup.

If Contractor wants to return the equipment to a location other than its original location, the payment to move the equipment must not exceed the cost of returning the equipment to its original location. If Contractor uses the equipment for work other than work paid by force account, the transportation cost is included in the other work.

Before moving or loading the equipment, Contractor must obtain authorization for the equipment rental's original location.

The City Engineer determines rental costs:

1. Using rates in *Labor Surcharge and Equipment Rental Rates*:
 - 1.1. By classifying equipment using manufacturer's ratings and manufacturer-approved changes.
 - 1.2. Current during the work paid by force account.
 - 1.3. Regardless of equipment ownership but City uses the rental document rates or minimum rental cost terms if:
 - 1.3.1. Rented from equipment business Contractor does not own.
 - 1.3.2. The Labor Surcharge and Equipment Rental Rates hourly rate is \$10.00 per hour or less.
2. Using rates established by the City Engineer for equipment not listed in *Labor Surcharge and Equipment Rental Rates*. Contractor may submit cost information that helps the City Engineer establish the rental rate but City uses the rental document rates or minimum rental cost terms if:
 - 2.1. Rented from equipment business Contractor does not own.
 - 2.2. The City Engineer establishes a rate of \$10.00 per hour or less.
3. Using rates for transport equipment not exceeding the hourly rates charged by established haulers.

Equipment rental rates include the cost of:

- | | |
|---|----------------------------|
| 1. Fuel | 7. Repairs and maintenance |
| 2. Oil | 8. Depreciation |
| 3. Lubrication | 9. Storage |
| 4. Supplies | 10. Insurance |
| 5. Small tools that are not consumed by use | 11. Incidentals |
| 6. Necessary attachments | |

City pays for small tools consumed by use. The City Engineer determines payment for small tools consumed by use based on Contractor-submitted invoices.

The City Engineer may authorize rates in excess of those in the *Labor Surcharge and Equipment Rental Rates* if:

1. Contractor submits a request to use rented equipment
2. Equipment is not available from Contractor's normal sources or from one of Contractor's subcontractors
3. Rented equipment is from an independent rental company
4. Proposed equipment rental rate is reasonable
5. The City Engineer authorizes the equipment source and the rental rate before Contractor uses the equipment

D. Equipment on the Job Site. For equipment on the job site at the time required to perform work paid by force account, the time paid is the time:

1. To move the equipment to the location of work paid by force account plus an equal amount of time to move the equipment to another location on the job site when the work paid by force account is completed

2. To load and unload equipment
3. Equipment is operated to perform work paid by force account and:
 - 3.1. Hourly rates are paid in 1/2-hour increments
 - 3.2. Daily rates are paid in 1/2-day increments

E. Equipment Not on the Job Site Required for Original-Contract Work. For equipment not on the job site at the time required to perform work paid by force account and required for original-Contract work, the time paid is the time the equipment is operated to perform work paid by force account and the time to move the equipment to a location on the job site when the work paid by force account is completed.

The minimum total time paid is:

1. 1 day if daily rates are paid
2. 8 hours if hourly rates are paid

If daily rates are recorded, equipment:

1. Idled is paid as 1/2 day
2. Operated four (4) hours or less is paid as 1/2 day
3. Operated four (4) hours or more is paid as one (1) day

If the minimum total time exceeds eight (8) hours and if hourly rates are listed, City rounds up hours operated to the nearest 1/2-hour increment and pays based on the hours shown in the following table. The table does not apply when equipment is not operated due to breakdowns, in which case rental hours are the hours the equipment was operated.

Equipment Rental Hours

Hours operated	Hours paid
0.0	4.00
0.5	4.25
1.0	4.50
1.5	4.75
2.0	5.00
2.5	5.25
3.0	5.50
3.5	5.75
4.0	6.00
4.5	6.25
5.0	6.50
5.5	6.75
6.0	7.00
6.5	7.25
7.0	7.5
7.5	7.75

≥ 8.0	hours used
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F. Equipment Not on the Job Site Not Required for Original-Contract Work. For equipment not on the job site at the time required to perform work paid by force account and not required for original-Contract work, the time paid is the time:

1. To move the equipment to the location of work paid by force account plus an equal amount of time to return the equipment to its source when the work paid by force account is completed
2. To load and unload equipment
3. Equipment is operated to perform work paid by force account

G. Non-Owner-Operated Dump Truck Rental. Contractor shall submit the rental rate for non-owner-operated dump truck rental to City. The City Engineer shall determine the payment rate. Payment for non-owner-operated dump truck rental is for the cost of renting a dump truck, including its driver. For the purpose of markup payment only, the non-owner-operated dump truck is rental equipment and the owner is a subcontractor.

The above markups shall constitute full compensation for all home office overhead, field office overhead, bond costs, profit, labor liability insurance, and other fixed or administrative costs that are not costs specifically designated as cost or equipment rental as stated above. The total payment made as provided above shall be deemed to be the actual cost of the work and shall constitute full compensation therefor.

When extra work to be paid for on a force account basis is performed by a subcontractor, an additional markup of 2 percent (2%) will be added to the total cost of that extra work including all markups specified in this Section. The additional 2 percent (2%) markup shall reimburse Contractor for additional administrative costs, and no other additional payment will be made by reason of performance of the extra work by a subcontractor.

EXHIBIT C
WORKERS' COMPENSATION INSURANCE CERTIFICATION

Pursuant to Section 18(b) of the Agreement, Contractor certifies as follows:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's 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.

Signed: _____

Date: _____

(Typed or Printed Name)

Business Address (Street Address, City, State & Zip Code):

Business Phone: () _____

EXHIBIT D
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the **City of Turlock**, State of California, has awarded to _____, hereinafter designated as the "Principal," a contract for **Project No. 24-042, "Senior Center Roof & HVAC Replacement"**; and,

WHEREAS, said Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract.

NOW, THEREFORE, we the Principal, and _____ as Surety, are held and firmly bound unto the City of Turlock in the penal sum of _____ (\$_____), lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if the above bounden Principal, or Principal's heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in said contract and any alteration thereof made as therein provided, on the Principal's part, to be kept and performed at the time and in the manner therein specified and in all respects according to their true intent and meaning; and shall defend, indemnify and save harmless the City of Turlock, its officers and agents as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and virtue.

And the Surety, for value received hereby stipulates and agrees that, in accordance with the Plans, Standard Specifications, Special Provisions, and other contract documents, no change, extension of time, alteration, or addition to the terms of the contract, or to the work to be performed hereunder, or to the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration of additions to the terms of the Contract to the work, or to the specifications.

The City of Turlock reserves the right to refuse use of any Contractor assigned by any surety to complete the work.

[Signatures on Following Page]

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their seals this _____ day of _____, 20____, the name and corporate seals of each corporate

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

(Corporate Seal)

Principal _____

By _____

Title _____

(Attach Notarial Acknowledgment)

(Corporate Seal)

Surety _____

Address _____

Phone No.: () _____ Fax No.: () _____

By _____

Attorneys-in-Fact

Title _____

(Attach Notarial Acknowledgment)

NOTE TO SURETY COMPANY: There must be submitted a certified copy of unrevoked resolution of authority for the attorneys-in-fact.

(Seal)

Witness _____

Approved as to form:

Risk Manager

EXHIBIT E
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the **City of Turlock**, a municipal corporation, has awarded to _____, hereinafter designated as the “Principal”, a contract for **Project No. 24-042, “Senior Center Roof & HVAC Replacement ”**; and

WHEREAS, said Principal is required to furnish a bond in connection with said contract, to secure payment of claims of laborers, mechanics, or materialmen employed on work under said contract, as provided by law.

NOW, THEREFORE, we the undersigned Principal and Surety are held and firmly bound unto the City of Turlock in the sum of _____ (\$_____), said sum being equal to the estimated amount payable by said City of Turlock under the terms of the contract, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, or assigns jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION ARE SUCH that if said Principal, or Principal’s heirs, executors, administrators, successors, or assigns, or subcontractors shall fail to pay for any material, provisions, provender, or other supplies, implements, or machinery used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code with respect to such work or labor, or for any amounts required to be deducted, withheld, and paid over to the Franchise Tax Board from these wages of employees of the Contractor and Contractor’s subcontractors pursuant to the Revenue and Taxation Code, with respect to such work and labor, the Surety or Sureties hereon will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall be void. In case suit is brought upon this bond, said Surety will pay a reasonable attorney’s fee to be fixed by the court.

This bond shall inure to the benefit of any and all persons, companies, and corporations entitled to file claims under Section 3138 of the Civil Code of the State of California so as to give a right of action to them or their assigns in any suit brought upon this bond.

Said Surety, for value received, hereby stipulates and agrees that, in accordance with the Plans, Standard Specifications, Special Provisions, and other Contract Documents, no change, extension of time, alteration or addition to the terms of the contract, or to the work to be performed there under, or to the specifications accompanying the same, shall in anywise affect its obligations 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.

[Signatures on Following Page]

IN WITNESS WHEREOF, the above-bound parties have executed this instrument under their seals this _____ day of _____, 20__, the name and corporate seals of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

(Corporate Seal)

Principal _____

By _____

Title _____

(Attach Notarial Acknowledgment)

(Corporate Seal)

Surety _____

Address _____

Phone No.: () _____ Fax No.: () _____

By _____

Attorneys-in-Fact

Title _____

(Attach Notarial Acknowledgment)

NOTE TO SURETY COMPANY: There must be submitted a certified copy of unrevoked resolution of authority for the attorneys-in-fact.

(Seal)

Witness _____

Approved as to form:

Risk Manager

SPECIAL PROVISIONS

City Project No: 24-042

Senior Center Roof & HVAC Replacement SECTION 1 SPECIFICATIONS AND PLANS

SPECIAL NOTES:

- 1) Official bid documents including plans and specifications are available online at <http://www.cityofturlock.org/capitalprojects>. All bids submitted for this project must conform to the requirements of the official bid documents, including plans and specifications.
- 2) An **optional** pre-bid meeting will be held on Thursday, August 14, 2025 at 10:30 AM at the Turlock Senior Center located at 1191 Cahill St, Turlock, CA 95380.

1.01 HIERARCHY OF CONTRACT DOCUMENTS:

The work described herein shall be done in accordance with the current City of Turlock Standard Specifications and the current edition of the State of California, Department of Transportation Standard Specifications and Standard Plans in effect on the date that the bid was submitted by the Contractor and in accordance with the following Special Provisions.

The Contract Documents are complementary; what is required by one is as binding as if required by all.

It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to City.

Clarifications and interpretations of the Contract Documents shall be issued by Engineer.

In case of conflict or discrepancy between any of the Contract Documents, the order of documents listed below shall be the order of precedence for the purpose of claims review, with the first item listed having the highest precedence. Contractor shall submit a Request for Information (RFI) to the Engineer immediately upon discovery of conflicting information in any of the Contract Documents prior to proceeding with the work that may be impacted by such conflicting information.

1. Contract Change Order (Modifications or changes last in time are first in precedence).
2. Addenda to Contract Agreement
3. Contract Agreement
4. Permits
5. Special Provisions
6. Technical Specifications included in bid specifications as an appendix
7. Notice Inviting Bids and Instructions to Bidders
8. Project Drawings
9. City of Turlock Standard Specifications

10. City of Turlock Standard Drawings
11. Caltrans Standard Specifications
12. Caltrans Standard Plans

With regards to discrepancies or conflicts between written dimensions given on drawings and the scaled measurements, the written dimensions shall govern.

With regards to discrepancies or conflicts between large-scale drawings and small-scale drawings, the larger scale shall govern.

With regards to discrepancies or conflicts between detailed drawings and referenced standard drawings or plans, the detailed drawings shall govern.

In the event where provisions of codes, safety orders, contract documents, referenced manufacturer's specifications or industry standards are in conflict, the more restrictive and higher quality shall govern.

Should it appear that the work to be done or any of the matters relative thereto are not sufficiently detailed or explained in these specifications, the special provisions, or the plans, the Contractor shall apply to the Engineer in writing for such further explanations as may be necessary and shall conform to them as part of the contract. All responses from the Engineer shall also be in writing. In the event of any doubt or question arising respecting the true meaning of these specifications, the special provisions or the plans, reference shall be made to the Engineer, whose decision thereon shall be final.

1.02 CONTRACTOR'S RESPONSIBILITY:

The Contractor shall examine carefully the site of the work and the plans and specifications therefore. The Contractor shall investigate to their satisfaction as to conditions to be encountered, the character, quality and quantity of surface, subsurface materials or obstacles to be encountered, the work to be performed, materials to be furnished, and as to the requirements of the bid, plans and specifications of the contract.

1.03 COMPLETENESS AND ACCURACY OF PLANS AND SPECIFICATIONS:

Pursuant to the California Public Contract Code, the bidder is required to review architectural or engineering plans and specifications prior to submission of a bid, and report any errors and omissions noted by Contractor to the Architect, Engineer or Owner five days prior to the bid opening date.

SECTION 2 PROPOSAL REQUIREMENTS AND CONDITIONS

2.01 GENERAL:

The Contractor's attention is directed to the "Notice to Contractor" for the date, time and location of the Pre-Bid meeting, if applicable.

The bidder's attention is directed to the provisions in Proposal for this bid for the requirements and conditions which the bidder must observe in the preparation of and the submission of the bid.

The bidder's bond shall conform to the bond form in the Bid book for the project and shall be properly filled out and executed. The bidder's bond form included in that book must be used.

In conformance with Public Contract Code Section 7106, a Non-Collusion Affidavit is included in the Bid book. Signing the Bid book shall also constitute signature of the Non-Collusion Affidavit.

The contractor, sub recipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of Title 49 CFR (Code of Federal Regulations) part 26 in the award and administration of US DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate. Each subcontract signed by the bidder must include this assurance.

Failure of the bidder to fulfill the requirements of the Special Provisions for submittals required to be furnished after bid opening, including but not limited to escrowed bid documents, where applicable, may subject the bidder to a determination of the bidder's responsibility in the event it is the apparent low bidder on future public works contracts.

SECTION 3 AWARD AND EXECUTION OF CONTRACT

3.01 GENERAL:

The Contractor's attention is directed to the provisions in the Contract for the requirements and conditions concerning award and execution of contract.

The award of the contract, if it be awarded, will be to the lowest responsible bidder whose bid complies with all the requirements prescribed.

The contract, in form and contents satisfactory to the City, shall be executed by the successful bidder and returned, together with the contract bonds and compensation and public liability policies or certificates, within ten (10) days, not including Sundays and legal holidays, after the first publication of the notice of award. No proposal shall be considered binding upon the City until the execution of the contract. Failure to execute the contract and file acceptable bonds, policies, or certificates as provided herein, within such ten (10) day period, shall be just cause for the annulment of the award, and forfeit of proposal guaranty to the City as liquidated damages. The executed contract documents shall be delivered to the following address:

Attention: Gloria Aguilar
City of Turlock, Engineering Division
156 S Broadway, Suite 150
Turlock, CA 95380

3.02 PRE-AWARD PROTEST PROCEDURES:

Failure to strictly comply with the protest procedures delineated below with respect to timeliness or protest contents will render a protest untimely and/or inadequate and will result in rejection thereof by the City. Only responsive bidders may submit a pre-award protest for consideration. Written protests may be either hand delivered or sent by mail. In the case of hand delivery, the protest must be received no later than five (5) calendar days after the bid opening. In case of mail, the written protest must be postmarked no later than five (5) calendar days after the bid opening. Pre-award protests shall be delivered to the following address:

Attention: William Morris, RCE, PLS, City Engineer
City of Turlock Engineering Division
156 S Broadway Suite 150
Turlock, CA 95380

The pre-award protest shall include all of the following: the name of the protester, City project number, a detailed description of the specific grounds for protest, any supporting documentation, and the specific ruling or relief requested. The City will respond to the pre-award protest and will provide a written determination within ten (10) working days after receiving the pre-award protest.

SECTION 4 BEGINNING OF WORK, TIME OF COMPLETION AND DELAY DAMAGES

4.01 NOTICE TO PROCEED:

The Notice to Proceed is defined as a letter issued by the City to the Contractor indicating that the Work may begin at the designated site and outlines the anticipated construction start and end dates. The Notice to Proceed is issued after award of the Contract by the City Council and after the Contractor has provided all bonds, insurance documentation, and any other information required by the project specifications prior to beginning the Work. At no time shall construction begin prior to the issuance of the Notice to Proceed. Any work performed prior to issuance of the Notice to Proceed shall be done at the Contractor's own risk.

Attention is directed to Section 5, "Time For Performance," of the Contract.

Attention is directed to Section 5(d), "Delay Damages," of the Contract.

4.02 PRE-CONSTRUCTION MEETING:

A pre-construction meeting will be held between Contractor and City prior to the beginning of construction. The exact time and place of this conference will be determined by City after award of the construction contract. Contractor's superintendent, Contractor's project manager(s), City's project manager, City's public works inspector, major subcontractors and others involved in performance of the Work, are required to be present.

The purpose of the meeting is to establish a working understanding between parties and to discuss the construction schedule, review the process for the review of submittals, RFIs, Change Order Requests, applications for payment, and other subjects pertinent to execution of the Work.

4.03 COPIES OF CONTRACT DOCUMENTS:

At the request of the Contractor, City shall furnish up to five (5) hard copies of the project plans and specifications. Contractor may produce additional copies as needed at Contractor's expense.

4.04 STAGING OF MATERIALS AND EQUIPMENT:

Contractor shall coordinate, arrange, and pay for leasing of area(s) for the staging materials and equipment, as necessary. Any areas utilized for staging shall be included in the Contractor's Erosion and

Sediment Control Plan or Storm Water Pollution Prevention Plan (SWPPP). Contractor shall take pre-construction photos of staging area(s) to use of the area and shall restore the areas to pre-construction conditions prior to completion.

Contractor may contact City personnel to request if there is City-owned land in the vicinity of the project available for staging. The City may grant access to City-owned land for staging, but shall not be obligated to do so. Prior to use of City property for staging purposes, Contractor and City shall execute a License Agreement in a form acceptable to the City which shall include provisions for indemnification and required insurance coverages. Contractor is advised that execution of a License Agreement will require time. Contractor is encouraged to begin the process early to avoid delay. City's processing time for the License Agreement shall not be justification for an increase in contract time.

4.05 SUBSTANTIAL COMPLETION:

Substantial Completion is the stage in the progress of the project when the work is sufficiently complete in accordance with the Contract so that the intended purpose of the project has been achieved. Substantial Completion shall include all Work for the Project, except the following:

- Completion of minor punch list items that do not prohibit use of the completed facility for its intended use and purpose
- Delivery of Operations and Maintenance manuals
- Completion of As-built drawings

When the Contractor considers the project to be substantially complete, the Contractor shall submit a request for Engineer's concurrence in writing and shall attach a list of incomplete work that it considers is minor in nature and does not prohibit the use of the completed facility for its intended use and purpose. Upon receipt of the Contractor's request and list of items, the Engineer will inspect and determine whether the project is substantially complete within three (3) working days of the request. If the inspection yields that the project is not sufficiently complete, the Engineer will notify the Contractor of those items in need of completion or correction before the attainment of Substantial Completion. Upon completion of the remaining items, Contractor shall submit another request for inspection by the Engineer. When Engineer is satisfied that the work is substantially complete, a written notice of Substantial Completion shall be transmitted by Engineer to Contractor within 24 hours of the successful inspection and shall include a list of all items of work that must be completed by Contractor prior to attainment of Final Completion (final punch list). This final punch list is provided for Contractor's convenience only. Engineer reserves the right to identify and add to the final punch list as new items may be identified as outstanding and in need of the Contractor's attention.

WARRANTY

The Contractor shall guarantee the work in general for a period of one (1) year beginning on the date Substantial Completion is attained. The Contractor shall not be required to perform any further work thereon beyond the said one year, except upon such items noted otherwise in the project plans, Special Provisions, or Technical Specifications.

4.06 FINAL COMPLETION:

Final Completion is the stage in the progress of the project when all work is complete in accordance with the Contract. Contractor shall inform Engineer when, in the opinion of the Contractor, all work has been complete as per the requirements of the Contract. The Engineer shall promptly inspect the work and make a determination as to whether all work of the project has been completed. Should any items of work be incomplete, the Engineer shall provide a written list of outstanding items to the Contractor for completion. Contractor shall address any remaining items and then request a determination be made by the Engineer. When Engineer is satisfied that the work is complete, a written notice of Final Completion shall be transmitted by Engineer to Contractor and contract working days shall cease to be counted on the project.

SECTION 5 GENERAL

5.01 INTERNET BASED CONSTRUCTION MANAGEMENT SYSTEM:

The Engineer and Contractor shall utilize Virtual Project Manager (VPM; www.new.virtual-pm.com), for submission of all construction documents for the duration of the construction contract and shall utilize VPM for project correspondence to the maximum extent possible. VPM is an online electronic project management system used to create, share, and review construction management documentation. The joint use of this system is to facilitate electronic exchange of information, automation of key processes, electronic notification of project activity, and overall management of contract documentation between City and Contractor. VPM shall be the primary means of project document submission and management.

VPM access is provided to the Contractor at no cost to the Contractor. The Contractor shall use computer hardware and software that meets the requirements of the VPM system. Upgrading of the Contractor's computer systems will not be justification for a cost or time modification to the Contract. The Contractor shall ensure its own connectivity to VPM by providing their own internet service and provide staff knowledgeable in the use of computers.

The Engineer will establish the Contractor's access to VPM by enabling access and assigning user profiles to Contractor's personnel. Contractor may request that access be granted to subcontractors, suppliers, or consultants, though access to these groups will be limited to read-only permissions. All communication to the Engineer shall be made directly through the Contractor. All authorized personnel shall have an individual user profile; no joint-use or shared user profiles will be allowed. Each user profile shall be assigned to a user group and have specific permission settings and privileges based on the user's need within VPM. The Contractor shall be responsible for the validity of the information entered by the Contractor into VPM.

Contractor will submit attachments within VPM in formats acceptable to the Engineer, such as PDF files, Microsoft Office files, and picture files (JPG, TIFF, BMP, JPEG, etc.). PDF documents shall be created through electronic conversion prior to uploading, rather than optically scanned, whenever possible.

Contractor shall upload relevant documents for review and approval under the corresponding module within VPM (submittal, RFI, etc.). Each document submittal shall have a unique title and description that references the item and the section number from the specifications.

Engineer shall provide training to the Contractor in the basic use of the VPM system, as requested by the Contractor.

The Contractor shall create a RFI upon recognition of any event or question of fact arising from the contract work. The Engineer will respond to a RFI submitted by the Contractor within seven (7) calendar days, not including legal holidays.

Inspector's daily logs shall be used by the City to document the activities of the work, any correspondence or direction given in the field, safety concerns and general comments about the project. The weekly statement of working days report (WSWD) will be generated by VPM and approved by the City. The WSWD shows the working days and non-working days charged for the reporting week, any time adjustments, a work completion date with the remaining working days left in the contract and the controlling activities for the week. The Contractor will be allowed 15 days to protest in writing the correctness of the statement.

5.02 BUSINESS LICENSE:

Contractor shall obtain a City of Turlock business license prior to issuance of the Notice to Proceed. The cost of the business license is an up-front fee of eighty-four dollars (\$84) plus fifty cents per thousand dollars in revenue received for work performed on the project, made payable on a semi-annual basis. Business Licenses are obtained through the Finance Division at Turlock City Hall, 156 S. Broadway, Suite 114. Additional information can be found on the City's website at <http://ci.turlock.ca.us/doingbusinessinturlock/businesslicenses/newbusinesslicense.asp>.

Full compensation for obtaining a business license as specified above shall be considered as included in the prices paid for the various contract bid items and no additional compensation will be allowed therefore.

5.03 PROGRESS SCHEDULE:

Contractor shall furnish City with Critical Path Method (CPM) format progress schedules. All schedules shall include separate activities, durations, and precedent and dependent activity relationships. Schedules shall be considered a submittal subject to review and acceptance by the Engineer in accordance with Section 5.06 "Submittals" of these Special Provisions. Schedules to be submitted include:

1. Baseline Schedule
 - a. The baseline schedule shall be submitted and must be accepted prior to the start of field construction activities. Construction progress payments may be withheld until the baseline schedule is submitted and accepted by the Engineer.
2. Schedule revisions
 - a. Submit revisions to the schedule when any of the following are true:
 - i. the schedule does not represent the actual progress of activities.
 - ii. delay in completion of the project indicates an overrun of the current contract time.
 - iii. completion of major portions of the work affect the critical path.
 - b. Schedule revisions shall include actual start and finish dates of activities that have been started and/or completed.

- c. Construction progress payments may be withheld if a required schedule revision is not submitted by contractor and accepted by Engineer
3. 3 week look ahead schedules
 - a. Shall be submitted in advance of any scheduled project progress meeting

If the Contractor believes that the Engineer has impacted its work such that the project completion date will be delayed, the Contractor must submit proof demonstrating the delay to the critical path through the means of a time impact analysis of the current, accepted schedule.

Acceptance of schedules by the Engineer is for general conformance with the Contract Documents and for Engineer's planning information, and does not relieve the Contractor of sole responsibility for planning, coordinating, and executing the Work within the contract completion dates. Omissions and errors in the accepted schedules shall not excuse performance less than that required by the Contract Documents. Acceptance by the Engineer in no way constitutes an evaluation or validation of the Contractor's plan, sequence or means, methods, and techniques of construction.

Full compensation for Progress Schedules shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5.04 PUBLIC COMMUNICATIONS:

The Contractor shall notify adjacent property owners, residents, and/or tenants when the execution of work may affect their everyday activities.

Any time the Contractor is acting on behalf of the City to perform work, the communication material between the Contractor and the public shall adhere to these Special Provisions and is subject to review and approval by the City. All communication materials shall be in English and Spanish.

Work Notice

Provide notice to affected property owners in advance of work. Notice is required for any work within an easement, within the City's right-of-way, outside of street, etc. Contractor shall notify the resident by door knocking and leaving a flier. Notices shall be received by the affected properties no less than two (2) and no more than seven (7) calendar days prior to starting the work.

Denial of Access

Provide notice for when it is necessary to temporarily deny access to public parking, residential property, or commercial property. Notify residents, businesses, and local agencies at least 24 hours before starting activities. The type of notification shall be a written communication prepared and distributed by the Contractor. The written communication shall contain, at a minimum, the following information:

- Describe the work to be performed
- Detail streets and limits of activities
- Indicate dates and work hours
- Be authorized by the City

Attention is directed to Section 12.02, "Traffic Management Plan," of these Special Provisions.

Utility Service Interruption

Provide notice for when any City's utility service connection must be interrupted. The type of notification shall be a written communication prepared and distributed by the Contractor. The written communication shall contain, at a minimum, the following information:

- The type of service (e.g. water or sewer) that will be interrupted
- The date and length of time service will be interrupted
- Contractor's Name and Contact Information

Notices shall be received by the affected properties no less than two (2) and no more than seven (7) calendar days prior to the work.

5.05 PERMITS:

Contractor is required to obtain the following permits.

Permit:	Agency / Division:	Required for:	Fee:
City of Turlock Building Permit	City of Turlock – Building Division	Roofing and HVAC installation at Turlock Senior Center.	\$0 to Contractor. Fees paid as interdepartmental transfer.
Notes: Contractor shall apply directly for building permits for roofing and HVAC replacement and shall provide all documentation and forms required by the Building Division. The Contractor shall comply with the 2022 California Mechanical Code, 2022 Plumbing Code, and the 2022 California Energy Code. Contractor shall provide an Acceptance Test Technician to perform duct leakage diagnostic testing and any other mechanical acceptance testing per the 2022 Energy Code and Nonresidential Compliance Manual, as applicable. Acceptance testing forms shall be submitted by the contractor and accepted by City prior to final completion. Failed duct leakage tests or other work necessary to comply with applicable codes resulting from existing conditions outside of the control or knowledge of the contractor prior to bidding the project shall be paid for by change order (See Section 4 of the Agreement, "Contract Price").			

5.06 SUBMITTALS:

General

Before making submittals, Contractor shall ensure that products and materials will be available in the quantities and in the time required by the Contract and the approved outline of construction activity. Each submittal shall clearly identify, by highlighting, arrows or other defined and permanent mark, the products and materials proposed for use.

All Submittals shall be made to Engineer by Contractor, including those generated by subcontractors and suppliers. Contractor shall carefully review all subcontractor and supplier submittals before submitting to Engineer for review. Submittals received from sources other than

Contractor's office shall be returned without action. If a submittal contains extraneous information, unmarked options or is incomplete, it will be returned to Contractor for correction and require re-submittal.

Submission

Submittals shall be made electronically in accordance with the Section 5.01 "Internet Based Construction Management System," of these special provisions.

Each submittal shall contain, at a minimum, the following information:

1. Title page including the following information:

Capital Project No.

Name of Contractor

Name of subcontractor (if applicable)

Description of item

Item Number on Bid Schedule

Contractor's initials and date indicating approval of item for submittal to Engineer

2. The brochure, product data sheet or catalog cut sheet. For all Product Data and Manufacturer's Instructions, excise or cross out non-applicable information and clearly mark applicable information with citations to and terminology consistent with Contract Documents.

3. Submittals that involve engineering computations or original design work shall show the name, the California State registration number, seal, and signature of the Professional Engineer certifying that such computations or design work are correct and in conformance with applicable standards, codes and accepted engineering practices.

4. For product samples, Contractor shall submit two (2) representative samples, one of which may be retained for the duration of the project or indefinitely at the discretion of Engineer. Although a reasonable attempt will be made to maintain the samples in good condition, neither City nor its representative will be responsible for the condition of the samples if returned to Contractor.

5. For material samples, unless a specific quantity is called for in the contract documents, Contractor shall submit a representative sample of the material, which may be retained for the duration of the project or indefinitely at the discretion of Engineer.

6. Certificates of compliance shall be submitted by Contractor to Engineer for those materials and products for which no sample and test results are specified. Certificates of compliance shall include the following information:

1. Statement that the product complies with the respective contract specifications.

2. Producer's name and address, product trade name and catalog number (if applicable), place of product origin, quantity of product to be furnished, and related contract plans and specification section numbers.
3. A certified copy of test results pertaining to the product from a certified independent testing laboratory. At the option of Engineer certified test results shall be signed and sealed by a Professional Engineer licensed to practice in the state of California.
4. Material Safety Data Sheets (MSDS) for all materials used or stored on the site that possess a MSDS, including materials used by Contractor for maintenance of equipment.

Review

Submittals will be processed by Engineer within fourteen (14) calendar days after receipt, not including legal holidays. When a submittal cannot be returned within that period, the Engineer will, within a reasonable time after receipt of the submittal, give notice of the date by which that submittal will be returned. Submittal shall receive one of four review actions:

- i. No Exceptions Taken – The submittal is approved without comments.
- ii. Supply as Noted / Make Corrections Noted – The submittal is approved, provided that the Contractor addresses the included comments.
- iii. Resubmit – The information provided with the submittal does not meet project requirements, however, Engineer has commented on some missing items that, if provided, may meet project requirements. Contractor shall resubmit the same product and provide additional information per the Engineer's comments.
- iv. Rejected – The submitted product cannot meet project requirements and is rejected. Contractor shall provide a separate product that meets project requirements as a resubmittal.

Engineer will review submittals for general conformance with the Contract Documents. The work shall be in accordance with approved submittals except that the Contractor shall not be relieved of the responsibility for deviations from requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal as part of a cover letter to the submittal itself, and as a written communication separate from the submittal cover letter, and (1) the Engineer has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Engineer's approval thereof. The Engineer's review does not extend to accuracy of dimensions, quantities, or performance of equipment and systems designed by the Contractor, or means, methods, techniques, sequences, or procedures. Unless specifically authorized to do so by Engineer, Contractor shall not procure, manufacture, or fabricate any part of the contract work until submittals related to said contract work have been favorably reviewed by Engineer.

"Or Equal" Items

Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to for review under the circumstances described below.

1. "Or Equal" Items: If in the Engineer's discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may be accomplished. A proposed item of material or equipment will be considered functionally equal to a named item if:

- a. In the exercise of reasonable judgment Engineer determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function of the named item, and;
- b. Contractor certifies that: (i) there is no increase in cost to the City; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

5.07 CHANGE ORDER PROCEDURES:

The contract price and contract time may only be changed by an executed Contract Change Order. A Contract Change Order is a written instrument prepared by the Owner, authorized by the City, stating agreement of the following:

- The change in the Work;
- The amount of the adjustment, if any, in the Contract Price; and
- The extent of the adjustment, if any, in the Contract Time.

When a change in the work is contemplated by the Engineer, a Construction Change Directive may be issued by the Engineer. A Construction Change Directive is a written order prepared by the Engineer directing a change in the Work prior to agreement on adjustment in the Contract Price or Contract Time, or both, in a Contract Change Order. The Engineer may, by Construction Change Directive and without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Price and Contract Time being adjusted accordingly thereafter according to the terms of the Agreement.

A Change Order Request is a document created by the Contractor which notifies the Engineer of changes in scope, changed conditions, errors, omissions, or inconsistencies in the contract documents which may or may not require an adjustment in the Contract Price and/or Contract Time.

Upon issuance of either a Construction Change Directive by the Engineer or a Change Order Request by the Contractor, the Contractor shall promptly prepare documentation proposing a contract cost and/or

time adjustment for review by the Engineer for the purposes of arriving at a mutually agreeable lump sum. Contractor shall submit backup information for costs of labor, equipment, material, and agreeable markups. Backup information shall contain sufficient detail to allow a thorough review. The Engineer will review backup documentation and issue a response to the Contractor as to agreement or disagreement with proposed adjustments to contract price and/or time. Contractor shall not proceed with the change in the Work involved until the proposed cost and time adjustment is acceptable to the Engineer. If attempts to arrive at a mutually agreeable lump sum amount fail, the Engineer may direct that the work proceeds on the basis of force account in accordance with the terms of the Agreement.

When the Engineer and Contractor agree with the adjustments in the Contract Price and/or Contract Time, the Engineer will prepare the change order. The City Engineer or the Director of Municipal Services may approve change orders up to 50% of the approved contingency for the project. The City Manager may approve change orders up to 100% of the approved contingency for the project. Change orders exceeding the contingency balance must be approved by the City Council.

5.08 NOTICE OF POTENTIAL CLAIM:

Attention is directed to Section 5-1.43 "Potential Claims and Dispute Resolution," of the Caltrans Standard Specifications.

5.09 LABOR NONDISCRIMINATION:

Attention is directed to the following Notice that is required by Chapter 5 of Division 4 of Title 2, California Code of Regulations.

NOTICE OF REQUIREMENT FOR NONDISCRIMINATION PROGRAM (GOV. CODE, SECTION 12990)

Your attention is called to the "Nondiscrimination Clause", set forth in Section 7 1.01A(4), "Labor Nondiscrimination," of the Caltrans Standard Specifications, which is applicable to all nonexempt state contracts and subcontracts, and to the "Standard California Nondiscrimination Construction Contract Specifications" set forth therein. The Specifications are applicable to all nonexempt state construction contracts and subcontracts of \$5,000 or more.

5.10 PREVAILING WAGE:

Attention is directed to Section 7-1.02K "Labor Code," of the Caltrans Standard Specifications, however certified payroll is not submitted to Caltrans for this project. Contractor shall submit certified payroll records both to the DIR and to the Engineer on a weekly basis. Contractor may submit certified payroll records to the Engineer via mail, email, or uploaded to VPM.

State Prevailing Wage Rates

Pursuant to Section 1773 of the Labor Code, the General Prevailing Wage Rates in the County Stanislaus in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at 156 S. Broadway St, Turlock, CA 95380 and available from the California Department of Industrial Relations' Internet web site at <http://www.dir.ca.gov/DLSR/PWD>. Changes, if any, to the general prevailing wage rates, will be available at the same location. Future effective General Prevailing Wage Rates, that have been

predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the General Prevailing Wage Rates.

5.11 SUBCONTRACTING:

No subcontract releases the Contractor from the contract or relieves the Contractor of their responsibility for a subcontractor's work.

If the Contractor violates Pub Cont Code § 4100 et seq., the City may exercise the remedies provided under Pub Cont Code § 4110. The City may refer the violation to the Contractors State License Board as provided under Pub Cont Code § 4111.

Each subcontract must comply with the contract.

Each subcontractor must have an active and valid State Contractor's License with a classification appropriate for the work to be performed (Bus & Prof Code, § 7000 et seq.).

Do not use a debarred contractor; a current list of debarred contractors is available at the Department of Industrial Relations' Web site.

Upon request by the Engineer, immediately remove and not again use a subcontractor who fails to prosecute the work satisfactorily.

5.12 PAYMENTS:

Attention is directed to Section 8, "Compensation," of the Contract.

At the end of each month the Contractor shall submit a proposed progress invoice. The invoice shall delineate each bid item, the amount of work performed for the invoice period (previous month) and the total amount of work performed to date. A sample invoice with all of the required items will be given to the Contractor at the pre-construction meeting.

The Engineer will review the progress invoice and after any changes the Engineer makes, will issue an official invoice for the Contractor to sign. The Contractor shall sign the official invoice and return to the Engineer. After the Engineer receives the signed, official invoice, the progress payment will be processed.

Retention in the amount of 5% of the progress payment amount shall be held from all progress payments. Retention will be released 35 days after the Notice of Completion has been filed, insofar as no stop notices were filed.

5.13 GUARANTY:

Attention is directed to Section 9-4, "Guaranty," of the City of Turlock Standard Specifications.

5.14 PROMPT PROGRESS PAYMENT TO SUBCONTRACTORS:

A prime contractor or subcontractor shall pay any subcontractor not later than 10 days of receipt of each progress payment in accordance with the provision in Section 7108.5 of the California Business and Professions Code concerning prompt payment to subcontractors. The 10 days is applicable unless a longer period is agreed to in writing. Any delay or postponement of payment over 30 days may take place only

for good cause and with the agency's prior written approval. Any violation of Section 7108.5 shall subject the violating contractor or subcontractor to the penalties, sanction and other remedies of that section. This requirement shall not be construed to limit or impair any contractual, administrative, or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the prime contractor, deficient subcontract performance, or noncompliance by a subcontractor.

5.15 PROMPT PAYMENT OF FUNDS WITHHELD TO SUBCONTRACTORS:

The agency shall hold retainage from the prime contractor and shall make prompt and regular incremental acceptances of portions, as determined by the agency of the contract work and pay retainage to the prime contractor based on these acceptances. The prime contractor or subcontractor shall return all monies withheld in retention from all subcontractors within seven (7) days for construction contracts and fifteen (15) days for consultant contracts after receiving payment for work satisfactorily completed and accepted including incremental acceptances of portions of the contract work by the agency. Any delay or postponement of payment may take place only for good cause and with the agency's prior written approval. Any violation of these provisions shall subject the violating prime contractor or subcontractor to the penalties, sanctions, and other remedies specified in Section 7108.5 of the California Business and Professions Code and Section 10262 of the California Public Contract Code for construction contracts, and Section 3321 of the California Civil Code for consultant contracts. This requirement shall not be construed to limit or impair any contractual, administrative or judicial remedies otherwise available to the contractor or subcontractor in the event of a dispute involving late payment or nonpayment by the contractor; deficient subcontractor performance and/or noncompliance by a subcontractor. This clause applies to both DBE and non-DBE subcontractors.

5.16 REMOVAL OF ASBESTOS AND HAZARDOUS SUBSTANCES:

Refer to Appendix B – Asbestos Inspection Report.

The contractor shall promptly, and before the following conditions are disturbed, notify the local public entity, in writing, of any:

- Material that the contractor believes may be material that is hazardous waste, as defined in Section 25117 of the Health and Safety Code, that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.
- Subsurface or latent physical conditions at the site differing from those indicated by information about the site made available to bidders prior to the deadline for submitting bids.
- Unknown physical conditions at the site of any unusual nature, different materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract.

Upon notification of any of the above, the City shall promptly investigate the conditions, and if it finds that the conditions do materially so differ, or do involve hazardous waste, and cause a decrease or increase in the contractor's cost of, or the time required for, performance of any part of the work, a change order shall be issued to modify the contract scope.

In the event that a dispute arises between the City and Contractor whether the conditions materially differ, or involve hazardous waste, or cause a decrease or increase in the contractor's cost of, or time required for, performance of any part of the work, the contractor shall not be excused from any scheduled completion date provided for by the contract, but shall proceed with all work to be performed under the contract. The contractor shall retain any and all rights provided either by contract or by law which pertain to the resolution of disputes and protests between the contracting parties.

When the presence of asbestos or hazardous substances are not shown on the plans or indicated in the specifications and the Contractor encounters materials which the Contractor reasonably believes to be asbestos or a hazardous substance as defined in Section 25914.1 of the Health and Safety Code, and the asbestos or hazardous substance has not been rendered harmless, the Contractor may continue work in unaffected areas reasonably believed to be safe. The Contractor shall immediately cease work in the affected area and report the condition to the Engineer in writing.

In conformance with Section 25914.1 of the Health and Safety Code, removal of asbestos or hazardous substances including exploratory work to identify and determine the extent of the asbestos or hazardous substance will be performed by separate contract.

If delay of work in the area delays the current controlling operation, the delay will be considered a right of way delay and the Contractor will be compensated for the delay in conformance with the provisions in Section 8 1.07, "Delays," of the Caltrans Standard Specifications.

5.17 WORKING HOURS:

Contractor's working hours shall be between 7:00 a.m. and 5:00 p.m., Monday through Friday, excluding legal holidays.

Contractor shall notify Engineer 48 hours prior to beginning work.

Contractor shall not work outside the above-mentioned working hours without prior written consent of Engineer.

Designated legal holidays are: January 1st, the third Monday in January, the third Monday in February, the last Monday in May, June 19th, July 4th, the first Monday in September, November 11th, Thanksgiving Day, the day after Thanksgiving, and December 25th. When a designated legal holiday falls on a Sunday, the following Monday shall be a designated legal holiday. When a designated legal holiday falls on a Saturday, the preceding Friday shall be a designated legal holiday.

Should the Contractor desire to work on a Saturday, Sunday or Legal Holiday, the Contractor shall request approval of the Engineer. The Engineer may reject the request with or without cause. Should approval be granted, the Contractor shall reimburse the City of Turlock the premium portion of cost of engineering, inspection, testing, superintendent, and/or other overhead expenses due to overtime which are directly chargeable to the contract. Should such work be undertaken at the request of the City, reimbursement will not be required.

5.18 SOUND CONTROL REQUIREMENTS:

Sound control shall be in accordance with Section 7 1.01I, "Sound Control Requirements," of the Caltrans Standard Specifications and these special provisions.

The noise level from Contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., shall not exceed 86 dba at a distance of 50 feet. This requirement in no way relieves Contractor from responsibility for complying with local ordinances regulating noise level.

Said noise level requirements shall apply to all equipment on the job or related to the job, including but not limited to trucks, transit mixers or transient equipment that may or may not be owned by Contractor. The use of loud sound signals shall be avoided in favor of light warnings except those required by safety law for the protection of personnel.

Full compensation for conforming to the requirements of this section shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

5.19 PRESERVATION OF PROPERTY:

The work performed in connection with various existing facilities shall be in accordance with Section 7-8, "Preservation of Property," of the City of Turlock Standard Specifications and these special provisions.

Due care shall be exercised to avoid injury or damage to existing improvements or facilities, utility facilities, adjacent property, and roadside trees, shrubs and other plants that are to remain in place.

Roadside trees, shrubs and other plants that are not to be removed and pole lines, fences, signs, markers and monuments, buildings and structures, conduits, pipelines under or above aground, sewer and water lines, sprinkler systems above or below ground, all roadway facilities, and any other improvements or facilities within or adjacent to the right-of-way shall be protected from injury or damage, and if ordered by Engineer, Contractor shall provide and install suitable safeguards, approved by Engineer, to protect such objects from injury or damage. If such objects are injured or damaged by reason of Contractor's operations they shall be replaced or restored at Contractor's expense. The facilities shall be replaced or restored to a condition as good or better as when Contractor entered upon the work, or as good as required by the specifications accompanying the contract, if any such objects are a part of the work being performed under the contract. Engineer may make or cause to be made such temporary repairs as necessary to restore to service any damaged facility. The cost of such repairs shall be borne by Contractor and may be deducted from any moneys due or to become due to Contractor under the contract.

The fact that any underground facility is not shown upon the plans shall not relieve Contractor of his responsibility under the Section "Existing Utilities and Facilities", of these provisions. It shall be Contractor's responsibility, pursuant thereto, to ascertain the location of such underground improvements or facilities that may be subject to damage by reason of construction operations.

Full compensation for furnishing all labor materials, tools, equipment, and incidentals, and for doing all the work involved in protecting or repairing property as specified above, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

5.20 TEMPORARY CONSTRUCTION POWER:

If temporary construction power is determined to be needed by the Contractor to perform the work, Contractor shall arrange and pay for all temporary electric power. The cost of temporary power shall be considered as included in the various contract bid items and no additional compensation will be allowed therefore.

5.21 SALVAGE MATERIALS:

If Contractor is directed to salvage materials in the Contract Documents, Contractor shall arrange for delivery of said item(s) to the City of Turlock Corporation Yard located at 701 S. Walnut Road, unless noted otherwise. Contractor shall coordinate delivery of salvaged materials through the public works inspector.

5.22 AS-BUILTS:

When the job is complete, Contractor shall provide City with as-built drawings. These as-built drawings shall show any and all differences (revisions, additions, etc.) between the signed improvement plans and the installed improvements. The Contractor shall identify all utilities that are located in the field. The as-builts will consist of redlined signed improvement plans. The Notice of Completion will not be issued until acceptable as-builts have been received by the Engineer.

SECTION 6 WORK RESTRICTIONS

6.01 WORK RESTRICTIONS:

Order of Work:

Contractor shall sequence the work to achieve substantial completion prior to the due date.

Contractor shall remove the existing roof surface and allow sufficient time for inspection of existing roof sheathing by City staff to determine if any repairs not indicated in the original scope of work are needed prior to installing new roof materials.

Weather Restrictions:

At contractor's request, City may suspend count of working days if it's determined that manufacturing and delivery HVAC equipment or roof materials impact the critical path.

Start of Work:

Contractor shall not begin demolishing the roof until all new roofing materials are available and onsite.

Roof Access:

The flat roof areas of the Senior Center do not feature roof access hatches accessible from the interior of the building. Contractor shall access the roof surface from the exterior of the building.

SECTION 7 (BLANK)

SECTION 8 MATERIALS

SECTION 9 DESCRIPTION OF WORK

The work consists, in general of: Replacement of the Senior Center flat roof and select HVAC units as indicated in the specifications and other associated work.

The work includes all necessary labor, materials, tools, equipment and any incidentals needed to perform the improvements as shown on the contract plans.

ADDITIVE BID ALTERNATE:

Bidder shall provide pricing for the additive bid alternate on the Bidder's Form, which may or may not be included in the contract price at City's option. The basis of award shall be the lowest base bid price without consideration of the additive bid alternate.

NOTE: The Additive Bid Alternate cost entered on the Bidder's Form shall be the incremental cost increase to upgrade from Bid Item #4 – 60 mil PVC to 2-ply KEE. For example, if the bidder's price for the base bid for flat roof replacement system of PVC totals \$280,000, and the total cost of work including a 2-ply KEE roofing system totals \$300,000, then the amount to be entered for the Additive Bid Alternate should be \$20,000.

See Section 10 of these Special Provisions for additional information related to the Base Bid and the Additive Bid Alternate.

SECTION 10 CONSTRUCTION DETAILS

10.01 MOBILIZATION & DEMOBILIZATION:

Mobilization is intended to compensate the Contractor for operations including, but not limited to, those necessary for the movement of personal, equipment, supplies and incidentals to / from the project site; for the payment of premium cost and insurance for the project; for any necessary costs of acquisition of equipment, including purchase and mobilization expense; and for any other work and operations which must be performed or costs that must be incurred incident to the initiation of meaningful work at the site and for which payment is not otherwise provided in the contract.

- (1) When 5 percent of the original contract amount is earned, 50 percent of the amount bid for mobilization, or 5 percent of the original contract amount, whichever is less, may be paid.
- (2) When 10 percent of the original contract amount is earned, 75 percent of the amount bid for mobilization or 7.5 percent of the original contract amount, whichever is less, may be paid.
- (3) When 20 percent of the original contract amount is earned, 95 percent of the amount bid for mobilization, or 9.5 percent of the original contract amount, whichever is less, may be paid.
- (4) When 50 percent of the original contract amount is earned, 100 percent of the amount bid for mobilization, or 10 percent of the original contract amount, whichever is less, may be paid.

(5) Upon completion of all work on the project, payment of any amount bid for mobilization in excess of 10 percent of the original contract amount will be paid.

10.02 ROOF DEMOLITION:

Contractor shall:

- Remove the entire existing flat roof system indicated in Appendix A including the membrane and underlayment to expose wood sheathing substrate.
- Coordinate tear-off inspection with the Building Inspector.
- Remove all edge, corner, and penetration flashings, coping, and pipe boots.
- Legally dispose of all removed roofing and related materials following local codes.

The lump sum contract price paid for Roof Demolition shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in roof demolition, complete in place, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.03 ALLOWANCE FOR REPAIRS:

After removal of the existing roof membrane, Contractor shall replace or repair damaged substrate due to mold, dry rot or other sources as directed by the Engineer.

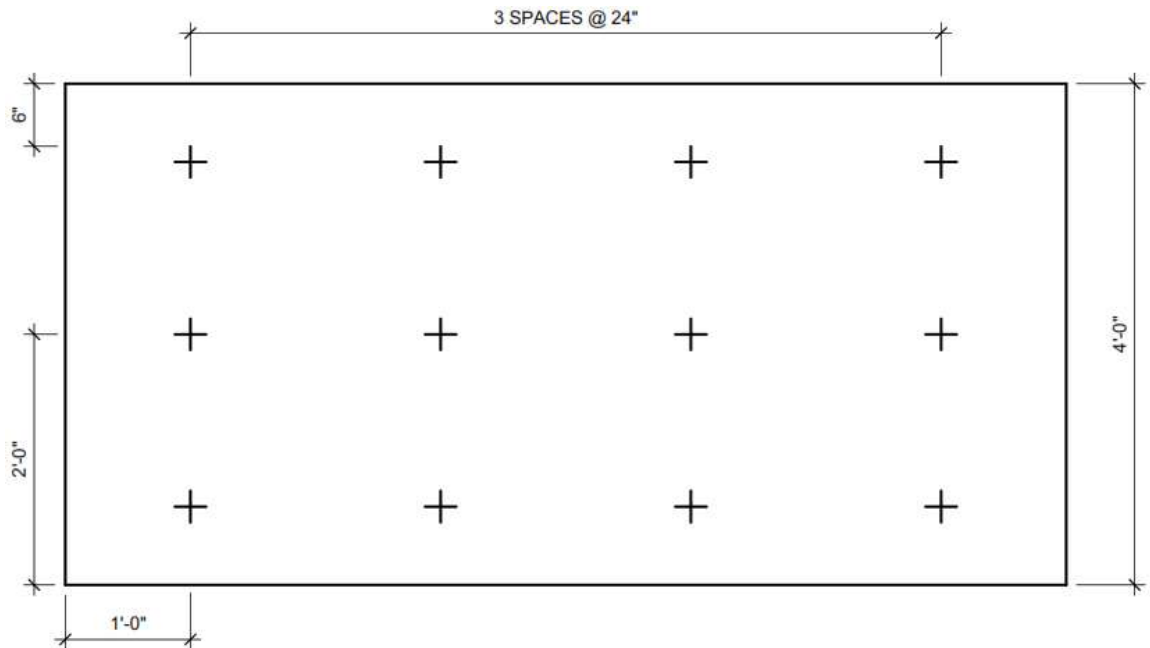
An allowance is included on the bidding form and shall be used to compensate the contractor for approved repairs. The cost of work for repairs that Contractor is required to complete shall be determined either by a mutually agreeable lump sum price or per Exhibit B of the Agreement, "Payment by Force Account." If the actual cost of work exceeds any allowance provided on the bidding form, a change order will be approved to compensate the Contractor for the difference.

10.04 FLAT ROOF REPLACEMENT – 60 MIL PVC (BASE BID):

The Base Bid includes full replacement of the existing flat roof system using a heavy-duty PVC membrane, as generally described below. Refer to Appendix D for technical specifications applicable to the base bid PVC roofing system. The work of the base bid is described generally below:

1. Cool Roof Requirements:
 - a. The new PVC membrane roofing system shall comply with the Cool Roof requirements of the California Energy Code (Title 24, Part 6) applicable at the time of permit issuance. The installed roofing material must meet or exceed the minimum solar reflectance, thermal emittance, and/or Solar Reflectance Index (SRI) values specified for low-slope (<2:12 pitch) roofing in nonresidential buildings.
 - b. Roofing products must be Certified and Listed in the Cool Roof Rating Council (CRRC) Product Directory and installed per the manufacturer's instructions to maintain performance ratings.
 - c. The Contractor shall:
 - i. Provide submittals verifying CRRC listing and compliance with applicable performance thresholds;
 - ii. Ensure all adhesives, sealants, and accessories are compatible with the selected cool roof system;

- iii. Coordinate with the City's Building Department for final approval and verification of Title 24 compliance, including all necessary documentation for inspection and close-out.
2. Edge & Flashing Details
 - a. Provide new metal coping, perimeter edge flashings, flashing around all penetrations, and replacement of damaged downspouts.
3. Roof Insulation Board
 - a. Install two layers of 2-inch-thick polyisocyanurate (4 inches total) with a minimum R-Value of 5.6 manufactured by Hunter, Johns Manville, GAF, or approved equal. Offset the two layers from each other during installation. Insulation board shall be attached as per the detail below:



4. Underlayment
 - a. Install 1/4" thick DensDeck Prime or approved equivalent.
5. PVC Membrane Installation
 - a. Install minimum 60 mil PVC membrane.
 - b. Membrane shall be installed per manufacturer's installation instructions.
6. Warranty Requirements
 - a. Provide a 20-year full system warranty covering materials and installation defects.

A detail of layers for Flat Roof Replacement – 60 Mil PVC (Base Bid) is included below:

The lump sum contract price paid for Flat Roof Replacement – 60 Mil PVC shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in Flat Roof Replacement – 60 Mil PVC, complete in place, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

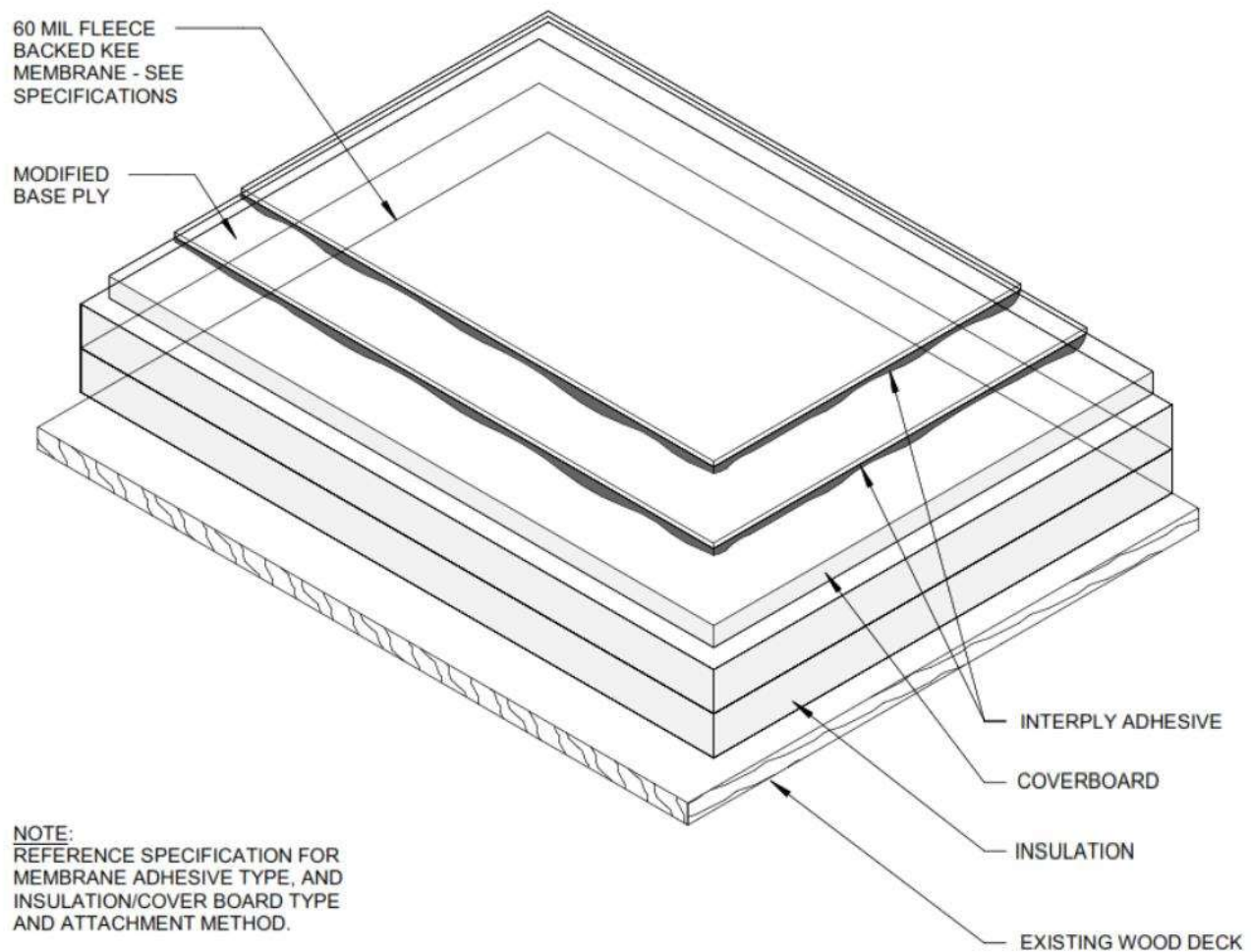
10.05 FLAT ROOF REPLACEMENT - 2-PLY KEE (ADDITIVE BID ALTERNATE):

NOTE: The Additive Bid Alternate cost entered on the Bidder's Form shall be the incremental cost increase to upgrade from Bid Item #4 – 60 mil PVC to 2-ply Ketone Ethylene Ester (KEE). For example, if the bidder's price for the base bid for flat roof replacement system of PVC totals \$280,000, and the total cost of work including a 2-ply KEE roofing system totals \$300,000, then the amount to be entered on the bid form for the Additive Bid Alternate should be \$20,000.

The additive bid alternate consists, in general, of replacement of the flat roof area using a 2-ply KEE (Ketone Ethylene Ester) system. The scope of work for Additive Alternate is generally described below. Refer to Appendix C for technical specifications applicable to the additive bid alternate 2-ply KEE roofing system.

1. Underlayment
 - a. Install per technical specifications.
2. 2-Ply KEE Membrane System
 - a. Install a fully reinforced 2-ply KEE membrane system such as Garland's KEE-Stone FB 60 over base ply Dura-Tuff® or approved equal. The 2-ply KEE membrane system shall be mechanically attached or fully adhered as per manufacturer's recommendation.
 - b. Minimum top ply thickness: 60 mil. Minimum thickness of base sheet is 80 mil.
 - c. System shall meet or exceed ASTM D6754, Type I standards for KEE single-ply roofing.
 - d. System shall be installed per manufacturer's installation instructions.
3. Warranty
 - a. Provide a 30-year full system warranty from membrane manufacturer covering labor and materials.
 - b. Warranty must be a "No Dollar Limit" (NDL) type and issued by the system manufacturer.

A detail of layers for Flat Roof Replacement - 2-Ply KEE (Additive Bid Alternate) is included below:



The lump sum contract price paid for Flat Roof Replacement - 2-Ply KEE (Additive Bid Alternate) shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in Flat Roof Replacement - 2-Ply KEE, complete in place, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.06 REMOVE MISCELLANEOUS ROOF APPURTENANCES:

The Contractor shall remove appurtenances from the roof as identified in Appendix A. Items shall be legally disposed of following local codes.

The lump sum contract price paid for Remove Miscellaneous Roof Appurtenances shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in removing miscellaneous roof appurtenances, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

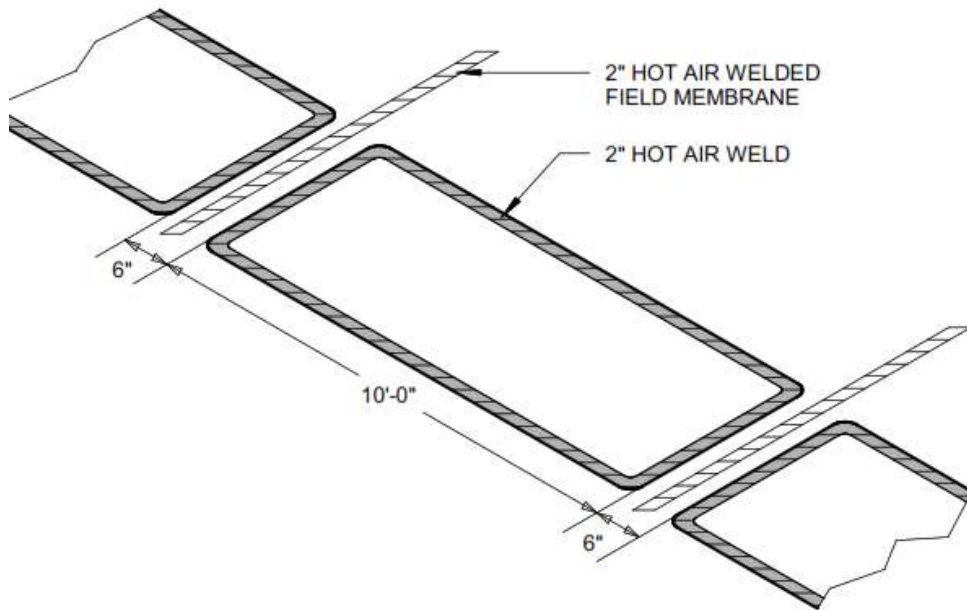
10.07 ROOF WALKWAY PADS:

The Contractor shall install roof walkway pads on the new roof as identified in Appendix A. Walkway pads shall be 30 inches wide and be compatible with the selected roofing system. Walkway pads shall be

slip-resistant and resistant to long term UV exposure. Walkway pads shall be installed per the detail below.

WALKWAY PAD NOTES:

- DO NOT INSTALL IN CONTINUOUS SECTIONS EXCEEDING 10' IN LENGTH
- DO NOT INSTALL OVER FIELD MEMBRANE OR FLASHING MEMBRANE SEAMS
- ADHERE THE WALKWAY TO THE FIELD MEMBRANE WITH BONDING ADHESIVE
- HOT AIR WELD A 2" EDGE AROUND THE WALKWAY TO THE FIELD MEMBRANE



WALKWAY PAD

The lump sum contract price paid for Roof Walkway Pads shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in installing roof walkway pads, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.08 HVAC INSTALLATION:

The Contractor shall furnish all labor, materials, equipment, and incidentals necessary to complete the scope of work for HVAC installation which is generally described below. Refer to Appendix E for technical specifications applicable to HVAC work.

1. Equipment Removal

- Remove existing HVAC units as identified in Appendix A. Legally dispose of all HVAC equipment in compliance with EPA and applicable environmental regulations.

2. Equipment Installation

- Two (2) ICP Carrier Branded 7.5-Ton, 208/230-volt, 3 phase, 125K BTU heat roof top units. Identified as Unit #1 & Unit #3 in Appendix A.
- One (1) ICP carrier branded 3.5 Ton 208/230 Volt 3 Phase roof top unit. Identified as Unit #4 in Appendix A.
- One (1) MAU Unit. Greenheck untampered aie roof supply fan, Nema 3R switch, vari-green adjustable EC fan motor with control, mixed flow blower wheel and 1” aluminum primary filter. Identified as Unit #5 per Appendix A.

3. Ductwork & Penetration Adjustments

- Install new roof jacks to accommodate existing duct penetrations.

4. Craning & Equipment Placement

- Provide and operate all necessary cranes and rigging to remove existing rooftop units and set new equipment in place.

5. Utility Reconnection

- Reconnect new units to existing:
 - Sheet metal ductwork
 - Natural gas lines
 - Condensate drain lines
 - Low-voltage control wiring
 - Line voltage power
 - Unit stands and vibration isolators (if applicable)

6. System Testing

- Start up and functionally test all units for proper operation in accordance with manufacturer specifications.
- Provide duct testing compliant with the 2022 California Mechanical Code, 2022 Plumbing Code, and the 2022 California Energy Code. Contractor shall provide an Acceptance Test Technician to perform duct leakage diagnostic testing and any other mechanical acceptance testing per the 2022 Energy Code and Nonresidential Compliance Manual, as applicable. Acceptance testing forms shall be submitted by the contractor and accepted by City prior to final completion. Failed duct leakage tests or other work necessary to comply with applicable codes resulting from existing conditions outside of the control or knowledge of the contractor prior to bidding the project shall be paid for by change order (See Section 4 of the Agreement, “Contract Price”).

The lump sum contract price paid for the various HVAC units to be installed shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in installing HVAC units, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.09 MECHANICAL EQUIPMENT SCREENING:

Contractor shall install new mechanical equipment screens. Mechanical equipment screens shall comply with Appendix F which include technical specifications and Turlock Municipal Code (TMC) Section 9-2-118:

Exterior mechanical equipment, except solar collectors affixed to the roof and residential utility meters, shall be screened from public view on all sides. Equipment to be screened includes, but is not limited to, heating, air conditioning, refrigeration equipment, plumbing lines, duct work, and transformers. Satellite dish antennas and microwave equipment shall be screened in accordance with TMC [9-2-101](#), Accessory buildings or structures.

The lump sum contract price paid for mechanical equipment screening shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in constructing and installing mechanical equipment screening, complete in place, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.10 ROOF CURBS FOR HVAC:

Contractor shall install prefabricated roof curbs as required to support all mechanical HVAC units on the Senior Center flat roof areas such that the curb height from top of proposed roofing materials to the top of curb is a minimum of 8 inches, regardless of whether the HVAC unit is to be replaced or remain. Existing curbs may be reused if they are compatible with new HVAC equipment and meet the minimum curb height requirement of 8 inches above the top of proposed roofing materials.

Submit:

- A. Product Data: Manufacturer's specifications and installation instructions.
- B. Shop Drawings: Indicate curb dimensions, construction, slopes, and mounting methods.
- C. Structural Calculations: Demonstrate compliance with imposed mechanical loads, including wind uplift and seismic requirements per CBC.

All welding shall conform to AWS standards. Installation shall be performed by experienced personnel regularly engaged in the installation of mechanical roof curbs. Acceptable manufacturers include Thybar Corporation, LMCurbs, Roof Products & Systems (RPS), or approved equal.

Roof Curbs shall:

- A. Be fabricated from 18-gauge minimum G90 galvanized steel, fully welded at corners.
- B. provide integral wood nailer (pressure-treated) for attachment of roofing membrane.
- C. Be factory-insulated with minimum 1-1/2 inch rigid polyisocyanurate insulation (R-9 minimum).
- D. be a minimum 8 inches in height above finished roof membrane.
- E. include accommodations for roof slope built into base as required to ensure level unit support.
- F. have a continuous perimeter flange to match roofing membrane and accommodate full flashing.
- G. support the mechanical unit, dead loads, wind uplift, and seismic forces in accordance with CBC and ASCE 7.
- H. be designed and installed to accommodate fully sealed integration with roofing membrane, including manufacturer-approved flashing methods.

Contractor shall:

- A. Verify field dimensions and conditions prior to fabrication. Notify the Engineer of any discrepancies.
- B. Install in accordance with manufacturer's instructions and approved shop drawings.

- C. Anchor curbs to structural deck or blocking
- D. Ensure top of curb is level and square.
- E. Coordinate with roofing contractor to integrate curb into roofing system using manufacturer-approved flashing and sealants to ensure a watertight installation.
- F. Coordinate with mechanical contractor to ensure proper placement and fit of HVAC equipment.

The lump sum contract price paid for Roof Curbs for HVAC shall include full compensation for furnishing all labor, material, tools, equipment and incidentals, and for doing all the work involved in constructing and installing roof curbs, complete in place, as shown on the plans, specified in the standard specifications and these special provisions, and as directed by Engineer.

10.11 FINAL CLEANUP:

Upon completion of the work, the Contractor shall remove all equipment, debris, and shall leave the site in a neat clean condition to the satisfaction of the Engineer.

SECTION 11 SIGNALS, LIGHTING, AND ELECTRICAL SYSTEM (BLANK)

SECTION 12 WORK ZONE MOBILITY (BLANK)

SECTION 13 (BLANK)

APPENDIX A – SITE MAP AND PHOTOS WITH MARKUPS







CP 24-042

Senior Center Roof & HVAC Replacement





CP 24-042

Senior Center Roof & HVAC Replacement

INDICATES
WALKING PADS

Turlock Senior Citizens

ROOF REPLACEMENT

Base bid: remove and replace flat roof area with PVC.
Bid alternate: remove and replace flat roof area with KEE.

Google Earth

70 ft



ASBESTOS INSPECTION REPORT

N O V E M B E R 2 2 , 2 0 2 4

BEM PROJECT NO. 24-68793

Site
Turlock Senior Center
1911 Cahill Street
Turlock, CA 95380

Prepared For
Ms. Charlotte Calvario
City of Turlock
156 South Broadway #150
Turlock, CA 95380

Prepared By

BOVEE ENVIRONMENTAL MANAGEMENT, INC.

1643 3rd Street, Escalon, CA 95320

Escalon 209-847-3800 • Fresno 559-264-3800 • Bakersfield 661-246-2110 • Sacramento 916-564-3838



November 22, 2024

Ms. Charlotte Calvario
City of Turlock
156 South Broadway #150
Turlock, CA 95380

Ms. Calvario:

Bovee Environmental Management, Inc. (BEM) is pleased to provide this Asbestos Survey Report regarding our asbestos inspection services at the Project Site summarized below.

I. PROJECT SUMMARY TABLE

PROJECT SITE NAME	PROJECT SITE LOCATION	PROJECT SITE NOTE
Turlock Senior Center	1911 Cahill Street, Turlock, CA 95380	Renovation

INSPECTION TYPE	INSPECTED AREAS	INSPECTION DATE
Commercial Asbestos Survey	Roof, HVAC & Exterior	November 20, 2024

II. INSPECTION SUMMARY

Samples of building materials considered to be *suspect asbestos containing materials** were identified and collected from the inspected renovation areas referenced above to determine their asbestos content. Samples collected from specific areas for the purpose of renovation activities are determined by the client. There maybe areas within the Subject Site that were not inspected and may contain additional suspect asbestos containing materials that were not sampled. Through proper chain-of-custody the collected samples are sent to Central Valley Laboratories for polarized light microscopy (PLM) analysis. A summary of all materials sampled and corresponding analytical results are listed below. Detailed information regarding sample number, actual sample location and analytical methods can be reviewed in attachments A and B.

SAMPLE COLLECTION SUMMARY

*See definitions on page 2.

#	MATERIAL SAMPLED	MATERIAL LOCATION	ASBESTOS	CATEGORY	SQ.FT.
68793-01	Brick Mortar	Exterior; Walls	None Detected	-	-
68793-02	Stucco	HVAC; Surrounding Walls	None Detected	-	-
68793-03	Vapor Barrier Paper	HVAC; Surrounding Walls	None Detected	-	-
68793-04	Penetration Mastic	Roof; Connection Patches & Roof & HVAC; Surrounding Walls	5% Chrysotile	Category I*	12
68793-05	Penetration Mastic	Roof; West End Small Exhaust	10% Chrysotile	Category I*	3

Sample Collection Summary table continued on page 2.

BEM Project No. 24-68793

#	MATERIAL SAMPLED	MATERIAL LOCATION	ASBESTOS	CATEGORY	SQ.FT.
68793-06	Penetration Mastic	Roof; West End Large Exhaust	None Detected	-	-
68793-07	Penetration Mastic	Roof; Penetrations	None Detected	-	-
68793-08	Penetration Mastic	Roof & HVAC Units; Seams	10% Chrysotile	Category I*	30
68793-09	Penetration Mastic	Roof; Edge Seams	10% Chrysotile	Category I*	440
68793-10	Roofing Material	All Layers of Rooftop; Central Pitched Roof	None Detected	-	-
68793-11	Roofing Material	All Layers of Rooftop; East Flat Roof	None Detected	-	-
68793-12	Roofing Material	All Layers of Rooftop; West Flat Roof	None Detected	-	-
68793-13	Roofing Material	All Layers of Rooftop; Corner Sections; Flat Roof	None Detected	-	-
68793-14	Roofing Material	All Layers of Rooftop; Parapet Walls	None Detected	-	-

III. DEFINITIONS (*)

Suspect Asbestos Containing Material (ACM) - Local air quality management districts consider a material that is not wood, metal or glass, to be a suspect ACM. All suspect ACMs are assumed to contain asbestos until laboratory analysis confirms that a material has no asbestos content.

Category – ACM’s are classified as either “friable”, material that can be easily crushed or pulverized by normal hand pressure or as “non-friable”, material that cannot be easily crushed or pulverized by normal hand pressure. *Friable ACMs are considered a Regulated Asbestos Containing Material (RACM) requiring Class I work practices and engineering controls. Non-friable ACMs are considered either Category I or Category II Asbestos Containing Material requiring Class II work practices and engineering controls.*

Trace - Analytical result that is equal to or less than 1.0 percent asbestos by weight, but greater than 0.1 percent. Materials with a trace amount of asbestos have to be removed as asbestos containing construction material (ACCM) according to Cal-OSHA, but can be disposed as non-ACM upon point count analyses according to federal and state EPA regulations.

Homogeneous – Multiple samples collected of a suspect material that is similar in general appearance and from areas that appear to have been constructed at the same time are considered homogeneous. If multiple samples are collected from a similar material within a homogeneous area and only one of the multiple samples is found to contain asbestos, regulations mandate that the entirety of that material with the homogeneous area must be considered an ACM.

VFT – Vinyl Floor Tile TBD – To be determined

IV. ASBESTOS REGULATORY STANDARDS

California Occupational Safety and Health Administration (Cal-OSHA)

- Friable and Non-Friable ACCMs containing more than 0.1 percent asbestos by weight are regulated.
- Enforces regulations pertaining to workers performing ACCM removal and workers in close proximity.
- Contractors who disturb more than 100 square feet or 160 lineal feet of ACCM must be registered by the contractor’s state license board as an asbestos removal contractor.
- Contractors who disturb any amount of ACCM must ensure employee protection by providing accredited training, medical examinations, personal protective equipment and a negative exposure assessment.

United States Environmental Protection Agency (EPA)

- Friable and Non-Friable ACMs containing more than 1.0 percent asbestos by weight are regulated.
- Enforces regulations pertaining to protecting the environment, not workers.
- Abatement Contractors who disturb more than 160 square feet or 260 linear feet of ACM must comply with the National Emissions Standards for Hazardous Air Pollutants Asbestos Regulations (40 CFR 61, Subpart M) and all state and federal requirements regarding asbestos.

Local Air Quality Control Districts

- Friable and Non-Friable ACM's containing more than 1.0 percent asbestos by weight are regulated.
- Enforces regulations pertaining to local air quality; "No Visible Air Emissions".
- Require an asbestos survey prior to renovation or demolition.
- Abatement Contractors who disturb more than 160 square feet or 260 linear feet of ACM must comply with the National Emissions Standards for Hazardous Air Pollutants Asbestos Regulations (40 CFR 61, Subpart M).

V. RECOMMENDATIONS

BEM recommends compliance with all federal, state and local regulations concerning asbestos.

VI. WARRANTY

Samples of suspect asbestos containing building materials, which could be disturbed during construction activities, are collected by BEM. Site inspections and sample collection methodologies are performed to meet regulatory standards and industry protocols. BEM warrants that the findings contained herein have been promulgated in general accordance with accepted professional practices at the time of its preparation as applied by professionals in the community. There is a possibility that conditions may exist in which suspect ACM's could not be identified within the scope of the survey or were not apparent or accessible during the site visit. All scheduled work should cease and additional samples should be collected if unidentified suspect ACM's are discovered during construction activities. If roofing materials were collected for this survey, BEM is not responsible for damages caused by sampling locations or roofing warranty voids with the manufacturer.

If quantities of asbestos containing materials are stated in this report, they are supplied for budgetary and regulatory notification purposes only. They should not be relied on for abatement bidding purposes.

VII. DISCLAIMER

If asbestos containing materials were impacted and/or damaged during a fire loss, then the soft and/or porous building materials and personal contents should be removed and disposed of as Asbestos Containing Building Materials (ACBM). The hard and/or nonporous building materials and personal contents can be cleaned and decontaminated on site. The locations surrounding the damaged areas should be considered contaminated with asbestos. BEM cannot assume these other areas were not impacted with asbestos. BEM recommends to either assume the building materials and/or personal contents within these surrounding locations are contaminated with asbestos; or TEM samples can be collected within these surrounding locations to determine if the asbestos contamination migrated to these surrounding locations adjacent to the known contamination.

VIII. CERTIFICATION

Inspection services relative to the Subject Site were provided by BEM's Mr. Brett L. Bovée & Mr. Anthony J. Miller, Certified Asbestos Consultants, No. 95-1643, expiration on 03/08/2025 & Number 19-6474, expiration on 04/17/2025.

BEM looks forward to assisting you in the near future. If you have any questions regarding this report or other BEM services, please do not hesitate to call us at (209) 847-3800 or (559) 264-3800.

Regards,

Brett L. Bovée

Brett L. Bovée, CAC, CMC, CDPH
Certified Asbestos Consultant No. 95-1643



Anthony J. Miller

Anthony J. Miller, CAC, CDPH
Certified Asbestos Consultant No. 19-6474



ATTACHMENT A

BEM SAMPLE FIELD SHEET



CHAIN OF CUSTODY

1643 3RD STREET

ESCALON, CA 95320

833-643-3800 • BEM@BOVEEINC.COM

BEM PROJECT #	24-68793	TURN-AROUND TIME
SAMPLE DATE:	11-20-24	<input checked="" type="radio"/> SAME DAY <input type="radio"/> 24HOURS
SURVEY TYPE:	Reno	<input type="radio"/>

Project Name:		Turlock Senior Center; Comm				Point Count Trace Results							
Address:		1191 Cahill St. Turlock CA 95280				<input checked="" type="radio"/> YES-400 <input type="radio"/> YES-1000 <input type="radio"/> NO							
Type of Loss:		Asb Reno											
Areas Inspected:		Roof, HVAC, Ext.											
Sample#	Sample Description	Surface	T. Time	LPM	Vol./Qua.	PLM	XRF	PCM	Mold Direct	E-COU	TEM	AAS	
68793													
- 01	Mat. Desc.: Brick Mortar	W C FL											
	Mat. Loc.: Ext	● ○ ○				●	○	○	○	○	○	○	
- 02	Mat. Desc.: Stucco	W C FL											
	Mat. Loc.: HVAC Surrounding walls	● ○ ○				●	○	○	○	○	○	○	
- 03	Mat. Desc.: VSP	W C FL											
	Mat. Loc.: "	● ○ ○				●	○	○	○	○	○	○	
- 04	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, HVAC Surrounding walls, Roof Connection Patches	○ ○ ○				●	○	○	○	○	○	○	
- 05	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, West End, Small Exhaust	○ ○ ○				●	○	○	○	○	○	○	
- 06	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, West End, Large Exhaust	○ ○ ○				●	○	○	○	○	○	○	
- 07	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, Penetrations	○ ○ ○				●	○	○	○	○	○	○	
- 08	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, HVAC units, Seams	○ ○ ○				●	○	○	○	○	○	○	
- 09	Mat. Desc.: Pen. Mastie	W C FL											
	Mat. Loc.: Roof, Edge Seams	○ ○ ○				●	○	○	○	○	○	○	
- 10	Mat. Desc.: RM	W C FL											
	Mat. Loc.: All Layers at Rooftop, Central pitched Roof	○ ○ ○				●	○	○	○	○	○	○	
- 11	Mat. Desc.: RM	W C FL											
	Mat. Loc.: All Layers at Rooftop, East, Flat Roof	○ ○ ○				●	○	○	○	○	○	○	
- 12	Mat. Desc.: RM	W C FL											
	Mat. Loc.: All Layers at Rooftop, West, Flat Roof	○ ○ ○				●	○	○	○	○	○	○	
- 13	Mat. Desc.: RM	W C FL											
	Mat. Loc.: All Layers at Rooftop Corner sections, Flat Roof	○ ○ ○				●	○	○	○	○	○	○	
- 14	Mat. Desc.: RM	W C FL											
	Mat. Loc.: All Layers at Rooftop, parapet walls	○ ○ ○				●	○	○	○	○	○	○	
	Mat. Desc.:	W C FL											
	Mat. Loc.:	○ ○ ○				○	○	○	○	○	○	○	
	Mat. Desc.:	W C FL											
	Mat. Loc.:	○ ○ ○				○	○	○	○	○	○	○	
	Mat. Desc.:	W C FL											
	Mat. Loc.:	○ ○ ○				○	○	○	○	○	○	○	
Relinquished by: J. Winburn		Received by: SC		Relinquished by:		Received by:							
X [Signature]		X Sage Cortes		X		X							
Time/Date: 11-20-24		Time/Date: 11/21/24 08:00 AM		Time/Date:		Time/Date:							
BEM USE ONLY:		Accept Samples <input checked="" type="checkbox"/> Yes		In. SC CITY PROJECT 24-642		Version: FCOC.03.15.22.1/1.QM							
APPENDIX B - PAGE 7 of 17													

ATTACHMENT B

LABORATORY ANALYTICAL REPORT



Report Prepared For:

Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Client Project: 24-68793

Report ID: AE242363

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on **November 21, 2024**. The samples were analyzed for asbestos using polarizing light microscopy (PLM) under EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763 Methods.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

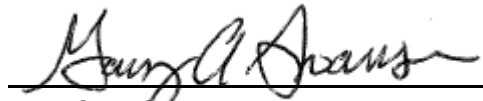
TOTAL SAMPLES ANALYZED: 14

TOTAL LAYERS ANALYZED: 25

LAYERS >1% ASBESTOS: 4

Kind Regards,




Gary Swanson
CVL Quality Manager



ASBESTOS REPORT SUMMARY

By: POLARIZED LIGHT MICROSCOPY

Client Project: 24-68793

Report ID: AE242363

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

Client ID	Layer	Lab ID	Color	Sample Description	% Asbestos
68793-01	1	AE2421846	Brown;Gray	Brick Mortar	None Detected
	2		White;Off White	Brick Mortar	None Detected
68793-02	1	AE2421847	White	Stucco Skim Coat	None Detected
	2		Gray	Stucco Base Coat	None Detected
68793-03	1	AE2421848	Black	Vapor Barrier Paper	None Detected
68793-04	1	AE2421849	Black	Penetration Mastic	Chrysotile 5%
68793-05	1	AE2421850	Black	Penetration Mastic	Chrysotile 10%
68793-06	1	AE2421851	Silver;Gray	Roofing Material	None Detected
	2		Black	Penetration Mastic	None Detected
68793-07	1	AE2421852	Off White	Penetration Mastic	None Detected
68793-08	1	AE2421853	Gray	Penetration Mastic	None Detected
	2		Black	Penetration Mastic	Chrysotile 10%
68793-09	1	AE2421854	Off White	Penetration Mastic	None Detected
	2		Black	Penetration Mastic	Chrysotile 10%



ASBESTOS REPORT SUMMARY

By: POLARIZED LIGHT MICROSCOPY

Client Project: 24-68793

Report ID: AE242363

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

Client ID	Layer	Lab ID	Color	Sample Description	% Asbestos
68793-10	1	AE2421855	Brown;Tan;Black	Roofing Material (Shingle)	None Detected
	2		Black	Roofing Material (Tar Paper)	None Detected
68793-11	1	AE2421856	White	Roofing Material	None Detected
	2		Off White	Roofing Material	None Detected
68793-12	1	AE2421857	White	Roofing Material	None Detected
	2		Off White	Roofing Material	None Detected
	3		Brown;Black	Roofing Material	None Detected
68793-13	1	AE2421858	White	Roofing Material	None Detected
	2		Off White	Roofing Material	None Detected
	3		Brown;Black	Roofing Material	None Detected
68793-14	1	AE2421859	White	Roofing Material	None Detected



ASBESTOS BULK ANALYSIS

By: POLARIZED LIGHT MICROSCOPY

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Report ID: AE242363
Received: 11/21/2024
Analyzed: 11/21/2024
Reported: 11/21/2024

Client Project: 24-68793

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

Client ID Sample ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS	
			Fibrous		Non-Fibrous		%	
68793-01 AE2421846	LAYER 1	Brown;Gray			Silicates	60%	None Detected	
	Brick Mortar	Heterogeneous Non-Fibrous Tightly Bound			Gravel	10%		
					Binder/Filler	20%		
					Paint	10%		
	LAYER 2	White;Off White			Silicates	65%	None Detected	
	Brick Mortar	Heterogeneous Non-Fibrous Bound			Binder/Filler	30%		
					Paint	5%		
68793-02 AE2421847	LAYER 1	White			Silicates	65%	None Detected	
	Stucco Skim Coat	Homogeneous Non-Fibrous Bound			Binder/Filler	35%		
	LAYER 2	Gray			Silicates	65%	None Detected	
	Stucco Base Coat	Homogeneous Non-Fibrous Bound			Binder/Filler	33%		
					Mica	2%		
68793-03 AE2421848	Vapor Barrier Paper	Black Homogeneous Fibrous Bound	Cellulose Fiber	40%	Tar	60%	None Detected	
68793-04 AE2421849	Penetration Mastic	Black Homogeneous Fibrous Bound	Fiberglass	10%	Gravel	10%	Chrysotile 5%	
			Cellulose Fiber	10%	Tar	65%		
68793-05 AE2421850	Penetration Mastic	Black Homogeneous Fibrous Bound			Tar	80%	Chrysotile 10%	
					Silicates	10%		
68793-06 AE2421851	LAYER 1	Silver;Gray	Synthetic Fiber	15%	Vinyl	10%	None Detected	
	Roofing Material	Heterogeneous Fibrous Bound			Binder/Filler	75%		
	LAYER 2	Black	Cellulose Fiber	10%	Tar	90%	None Detected	
	Penetration Mastic	Homogeneous Fibrous Bound						



ASBESTOS BULK ANALYSIS

By: POLARIZED LIGHT MICROSCOPY

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Report ID: AE242363
Received: 11/21/2024
Analyzed: 11/21/2024
Reported: 11/21/2024

Client Project: 24-68793

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

Client ID Sample ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS	
			Fibrous	Non-Fibrous		%
68793-07 AE2421852	Penetration Mastic	Off White Homogeneous Non-Fibrous Tightly Bound		Binder/Filler 100%	None Detected	
68793-08 AE2421853	LAYER 1 Penetration Mastic	Gray Homogeneous Fibrous Tightly Bound	Synthetic Fiber 10%	Binder/Filler 90%	None Detected	
	LAYER 2 Penetration Mastic	Black Homogeneous Fibrous Bound		Tar 90%	Chrysotile 10%	
68793-09 AE2421854	LAYER 1 Penetration Mastic	Off White Homogeneous Non-Fibrous Tightly Bound		Binder/Filler 100%	None Detected	
	LAYER 2 Penetration Mastic	Black Homogeneous Fibrous Bound		Tar 90%	Chrysotile 10%	
68793-10 AE2421855	LAYER 1 Roofing Material (Shingle)	Brown; Tan; Black Heterogeneous Fibrous Bound	Fiberglass 20%	Tar Silicates Gravel 50% 15% 15%	None Detected	
	LAYER 2 Roofing Material (Tar Paper)	Black Homogeneous Fibrous Bound	Cellulose Fiber 60%	Tar 40%	None Detected	
68793-11 AE2421856	LAYER 1 Roofing Material	White Heterogeneous Fibrous Bound	Synthetic Fiber 15%	Binder/Filler 85%	None Detected	
	LAYER 2 Roofing Material	Off White Heterogeneous Fibrous Bound	Fiberglass 15%	Gypsum 85%	None Detected	



ASBESTOS BULK ANALYSIS

By: POLARIZED LIGHT MICROSCOPY

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Report ID: AE242363
Received: 11/21/2024
Analyzed: 11/21/2024
Reported: 11/21/2024

Client Project: 24-68793

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

Client ID Sample ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
68793-12 AE2421857	LAYER 1 Roofing Material	White Heterogeneous Fibrous Bound	Synthetic Fiber	15%	Binder/Filler	85%	None Detected
	LAYER 2 Roofing Material	Off White Heterogeneous Fibrous Bound	Fiberglass	15%	Gypsum	85%	None Detected
	LAYER 3 Roofing Material	Brown;Black Heterogeneous Fibrous Loosely Bound	Cellulose Fiber	90%	Tar	10%	None Detected
68793-13 AE2421858	LAYER 1 Roofing Material	White Heterogeneous Fibrous Bound	Synthetic Fiber	15%	Binder/Filler	85%	None Detected
	LAYER 2 Roofing Material	Off White Heterogeneous Fibrous Bound	Fiberglass	15%	Gypsum	85%	None Detected
	LAYER 3 Roofing Material	Brown;Black Heterogeneous Fibrous Loosely Bound	Cellulose Fiber	90%	Tar	10%	None Detected
68793-14 AE2421859	Roofing Material	White Heterogeneous Fibrous Bound	Synthetic Fiber	15%	Binder/Filler Tar	80% 5%	None Detected



ASBESTOS BULK ANALYSIS

By: POLARIZED LIGHT MICROSCOPY

Client: Bovee Environmental Management
1643 3rd Street
Escalon, CA 95320

Report ID: AE242363
Received: 11/21/2024
Analyzed: 11/21/2024
Reported: 11/21/2024

Client Project: 24-68793

Methodology: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite Non-Trem = Non-Asbestiform Tremolite

METHOD: EPA 600/R-93/116 and EPA – Appendix E to Subpart E of 40 CFR Part 763

REPORTING LIMIT: <1% by Visual Estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by Weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under any of Central Valley Laboratories' accreditations. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Central Valley Laboratories (CVL). CVL makes no warranty representation regarding the accuracy of customer submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the customer. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the customer to claim product endorsement by NVLAP, AIHA, ELAP, NIST or any agency of the U.S. Government.

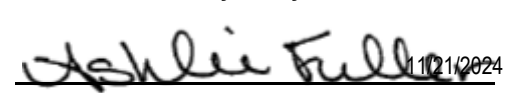
CVL is accredited with the Environmental Laboratory Accreditation Program (ELAP) under Certificate Number 3013.

CVL is accredited for Asbestos Analysis of Bulk Building Materials by PLM by the National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 600260-0).

Report Authorized By


Gary Swanson, CVL Quality Manager Date 11/21/2024

Analyzed By


Ashlie Fuller Date 11/21/2024



ATTACHMENT C

SITE DRAWING

24-68793
1191 Cahill St. Turlock CA 95380



SECTION 075500
MODIFIED KEE MEMBRANE ROOFING

1. GENERAL

1.1. SECTION INCLUDES

- A. Includes all labor, materials, and equipment to install a Cold Applied 2-Ply Thermoplastic Hybrid Roof System roof (KEE-Stone FB 60) over the properly prepared substrate.
- B. Includes removal and disposal of existing roofing system(s), insulation board, flashings, sheet metal items, copings, etc. for a complete prepared roof surface to receive the new roofing system.
- C. Includes a new cold applied 2-ply hybrid roofing system with all accessories as needed for a complete warrantable roofing system.

1.2. REFERENCES

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- B. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- C. ASTM D 312 - Standard Specification for Asphalt used in Roofing.
- D. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- E. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.
- F. ASTM D 2822 Standard Specification for Asphalt Roof Cement.
- G. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- H. ASTM D 6754 Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing
- I. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- J. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- K. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- L. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

- M. Factory Mutual Research (FM): Roof Assembly Classifications.
- N. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- O. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- P. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- Q. Warnock Hersey (WH): Fire Hazard Classifications.
- R. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- S. ASCE 7-16, Minimum Design Loads for Buildings and Other Structures
- T. UL - Fire Resistance Directory.
- U. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- V. California Title 24 Energy Efficient Standards.
- W. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code.

1.3. DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1. Factory Mutual Class A Rating.
 - 2. Underwriters Laboratory Class A Rating.
 - 3. Warnock Hersey Class A Rating.
- C. Design Requirements:
 - 1. Uniform Wind Uplift Load Capacity
 - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - 1. Design Code: ASCE 7, Method 2 for Components and Cladding.
 - 2. Importance Category:
 - a. III
 - 3. Importance Factor of:
 - a. 1.0
 - 4. Wind Speed: 100 mph
 - 5. Exposure Category:
 - a. C
 - 6. Design Roof Height: 50 feet.
 - 7. Minimum Building Width: 30 feet.
 - 8. Roof Pitch: 0.5 :12.
 - 9. Roof Area Design Uplift Pressure:
 - a. Zone 1 - Field of roof 14.3 psf
 - b. Zone 2 - Eaves, ridges, hips and rakes 24 psf
 - c. Zone 3 - Corners 36 psf

2. Snow Load: N/A psf.
3. Live Load: 20 psf, or not to exceed original building design.
4. Dead Load:
 - a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.
- D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.
- E. LEED: Roof system shall meet the reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island - Roof.
- F. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.
- G. Roof system shall have been tested in compliance with the following codes and test requirements:
 1. Miami-Dade County:
 - a. Self-Adhered Membrane Systems Over:
 1. Wood Decks N.O.A.
 - b. Torch and Mop Membrane Systems Over
 1. Wood Decks N.O.A.
 - c. Roofing Underlayments
 1. Garland Underlayments N.O.A.
 - d. Roofing Cements and Coatings
 1. Garland Coatings and Mastics N.O.A.
 2. Cool Roof Rating Council:
 - a. CRRC Directory: CRRC 0700-0034
 3. International Code Council Evaluation Service (ICC-ES):
 - a. Membrane Systems
 1. ESR-3460
 4. FM Approvals:
 - a. RoofNav Website

1.4. SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation instructions.
- C. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes, tapered insulation design if applicable, and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- D. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins. Report shall be reviewed by a Professional Engineer

registered in the State of the Project who has provided roof system attachment analysis for not less than 5 consecutive years.

- E. LEED Submittals: Provide documentation of how the requirements of Credit will be met:
 - 1. List of proposed materials with recycled content. Indicate post-consumer recycled content and pre-consumer recycled content for each product having recycled content.
 - 2. Product data and certification letter indicating percentages by weight of post-consumer and pre-consumer recycled content for products having recycled content.
 - 3. Product reflectivity and emissivity criteria to qualify for one point under the LEED credit category, Credit 7.2, Landscape & Exterior Design to Reduce Heat Island - Roof.
- F. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio based materials
- G. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- H. Provide written certification from the roofing system manufacturer certifying the applicator is currently authorized to install the specified roof system and ability to provide the specified warranty.
- I. Sample Warranty: Provide an unexecuted copy of the warranty specified for this project clearly stating the terms required of the owner, contractor, and manufacturer.
- J. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- K. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- L. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- M. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.
- N. Any material submitted as equal to or better than the specified material must be accompanied by a report signed and sealed by a professional engineer licensed in the state in which the installation is to take place. This report shall show that the submitted equal meets the Design and Performance criteria in this specification. Substitution requests submitted without licensed engineer stamp will be rejected for non-conformance.

1.5. QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual and all manufacturer's instructions.

- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.6. PRE-INSTALLATION MEETINGS

- A. Coordinate with installation of associated flashings and counterflashings installed by other sections.
- B. Preinstallation Meeting:
 - 1. Convene two weeks before starting work of this section. Meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing that must precede or follow roofing work (including mechanical work if any), Architect/Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:
 - 2. Review preparation and installation procedures and coordinating and scheduling required with related work.
 - a. Review methods and procedures related to roofing work.
 - b. Review structural loading limitations of new deck.
 - c. Review roofing systems requirements (drawings, specifications, and other contract documents).
 - d. Review required submittals, both completed and yet to be completed.
 - e. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - f. Review required inspection, testing, certifying, and material usage accounting procedures.
 - g. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including provision of temporary roofing over occupied spaces.

- h. Record discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
 - i. Review notification procedures for weather or non-working days.
 - C. Sequence installation of roofing with related units of work specified in other sections to ensure that roof assemblies, including roof accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
 - B. Inspect and make notes of job conditions prior to installation:
 - 1. Record minutes of the conference and provide copies to all parties present.
 - 2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
 - 3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Owner and Architect.

1.7. DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.8. COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.9. PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not apply roofing membrane to damp or frozen deck surface or when 40% chance of precipitation is expected or occurring.

- C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.10. WARRANTY

- A. Special Warranty: Manufacturer's No Dollar Limit Warranty, Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
 - 1. Special warranty includes membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders (where included) , and walkway product.
 - 2. Warranty Period: 30 years from date of Substantial Completion.
 - 3. Must cover calculated wind speed.
- 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 roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders (where included) , and walkway products, for the following warranty period:
 - 1. Correct defective Work within a five (5) year period after Date of Substantial Completion.

2.PRODUCTS

2.1. MANUFACTURERS

- A. Acceptable Manufacturer: The Garland Company, Inc.; 3800 E. 91st St., Cleveland, OH 44105. Local Representative: Rich Jones Phone: (559) 647-1196. rjones@garlandco.com Web Site: www.garlandco.com.
- B. Substitutions may be requested per Special Provisions Section 5.06 "Submittals."
- C. The Products specified are intended and the Standard of Quality for the products required for this project.
 - 1. If alternate products are requested for use, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/ Owner for approval prior to acceptance.
 - 2. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
 - a. Personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
 - b. Will provide the same guarantee for substitution as for the product and method specified.
 - c. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 - d. Will waive all claims for additional cost related to substitution, which consequently become apparent.

- e. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
- f. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
- 3. Architect/ Owner reserves the right to be the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that has met ALL specified requirement criteria.
- 4. Failure to submit substitution package, or any portion thereof requested, will result in immediate disqualification and consideration for that particular contractors request for manufacturer substitution.

2.2. COLD APPLIED 2-PLY ROOF SYSTEM

- A. Rosin Sheet: One ply of mechanically attached to the prepared substrate.
 - 1. Red Rosin Paper:
- B. Insulation: As specified in Section 07220 and shown on Drawings.
 - 1. Insulation assembly; taper or constant thickness as indicated on Drawings. Where tapered insulation is indicated, provide slopes as indicated, and as required to ensure positive drainage and minimum slope at valleys of 1/4 inch in 12 inches.
- C. Insulation: As specified in Section 07220 and shown on Drawings;
 - 1. One layer of six side primed 1/2" woodfiber insulation board
- D. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive (1):
 - 1. Flexbase 80 Base Sheet (80 mil):
- E. Interply Adhesive (1):
 - 1. Green Lock Plus Membrane Adhesive:
- F. Thermoplastic Sheet: One ply bonded to the prepared substrate with Interply Adhesive (2):
 - 1. KEE Stone FB 60:
- G. Interply Adhesive (2):
 - 1. KEE-Lock Spatter Spray:
- H. Base & Wall Flashing (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive (3).
 - 1. Flexbase 80 Base Sheet (80 mil)
- I. Flashing Membrane Adhesive: Adhesive (3)
 - 1. Green Lock Plus Flashing Adhesive
- J. Flashing Membrane Sheet: One ply bonded to the prepared substrate with Adhesive (4):
 - 1. KEE-Stone NF 60:
- K. Flashing Membrane Adhesive: Adhesive (4)
 - 1. KEE-Lock WB Flashing Adhesive

2.3. ACCESSORIES:

- A. Roof Insulation Thermal Value (R), nominal as indicated on drawings and as follows:
Provide insulation of thickness required to develop drainage patterns as indicated, as required to eliminate ponding and to meet thermal requirements noted on drawings.
- B. Roof Insulation Field Layer: Provide and install one layer of ½” six side primed Blue Ridge Structodek High Density Fiberboard Roof Insulation. ASTM C 208, Type II.
- C. Vapor Retarder: Red Rosin Paper; Install layer rosin sheet shingled uniformly to achieve one ply over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof.
 - 1. Red Rosin Paper by WR Meadows
 - a. Weight – 12 lb./roll
 - b. Size – 500 square feet p/roll
 - c. 36” wide by 167’ long
- D. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel, Fasteners shall be self-clinching type of penetrating type as recommended by the deck manufacturer. Fasten nails and fasteners flush-driven through flat metal discs not less than 1 inch (25 mm) diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than 1 inch (25 mm) diameter are used.
- E. Walkway Pads - As recommended and furnished by the membrane manufacturer adhered to control foot traffic on roof top surface and provide a durable system compliant non-slip walkway.
 - 1. SolarBright Walkway Roll by WPG, A Garland Company.
 - a. 30” x 60’ walk way roll
 - b. Install walk way pads in a path from all roof access points to and around all HVAC and serviceable mechanical equipment, to and around roof hatches, and as designated by the owner.
 - c. Walkway Pads shall not be installed over field seams or flashing seams of the membrane.
- F. Urethane Sealant Hybrid - Tuff-Stuff MS: One part, non-sag sealant as approved and furnished by the membrane manufacturer for moving joints.
 - 1. Tensile Strength, ASTM D 412: 250 psi
 - 2. Elongation, ASTM D 412: 450%
 - 3. Hardness, Shore A ASTM C 920: 35
 - 4. Adhesion-in-Peel, ASTM C 92: 30 pli
- G. Sealant - Green-Lock Structural Adhesive: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
 - 1. Elongation, ASTM D 412: 300%
 - 2. Hardness, Shore A, ASTM C 920: 50
 - 3. Shear Strength, ASTM D 1002: 300 psi
- H. Butyl Tape: 100% solids, asbestos free and compressive tape designed to seal as recommended and furnished by the membrane manufacturer.
- I. Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended and furnished by the membrane

manufacturer.

2.4. EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Pre-Manufactured Edge Metal Finishes:
 1. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, as shipped from the mill
 2. Exposed surfaces for coated panels:
 - a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer.
Weathering finish as referred by National Coil Coaters Association (NCCA).
Provided with the following properties.
 1. Pencil Hardness: ASTM D3363, HB-H / NCCA II-2.
 2. Bend: ASTM D-4145, O-T / NCCA II-19
 3. Cross-Hatch Adhesion: ASTM D3359, no loss of adhesion
 4. Gloss (60 deg. angle): ASTM D523, 25+/-5%
 5. Reverse Bend: ASTM D2794, no cracking or loss of adhesion
 6. Nominal Thickness: ASTM D1005
 - a. Primer: 0.2 mils
 - b. Topcoat, 0.7 mils min
 - c. Clear Coat (optional, only used with 22 ga. steel) 0.3 mils
 7. Color: Provide as specified. (Subject to minimum quantities)
- B. Flashing Boot - SolarBright Flashing Boot: KEE pipe boot for sealing single or multiple pipe penetrations adhered in approved adhesives as recommended and furnished by the membrane manufacturer.
- C. Vents and Breathers: Heavy gauge aluminum and fully insulated vent that allows moisture and air to escape but not enter the roof system as recommended and furnished by the membrane manufacturer.
- D. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- E. Drain Flashings should be 4lb (1.8kg) sheet lead formed and rolled.
- F. Plumbing stacks are too have SolarBright Flashing Boots. Caulking and banding will be required with the specified sealant.
- G. Liquid Flashing - Tuff-Flash: An asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.
 1. Tensile Strength, ASTM D 412: 400 psi
 2. Elongation, ASTM D 412: 300%
 3. Density @77 deg. F 8.5 lb/gal typical
- H. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07620.
 1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.
- I. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07.

1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

3.EXECUTION

3.1. EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2. PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.
- B. Wood Deck:
 1. Dimensional wood deck shall be minimum 1 inch (25 mm) thick, knotholes and cracks larger than 1/4 inch shall be covered with sheet metal. All boards shall be appropriately nailed and have adequate end bearing to the centers of beams/rafters. Lumber shall be kiln dried.
 2. Plywood shall be a minimum 15/32 inch (11.9 mm) thick and conform to the standards and installation requirements of the American Plywood Association (APA).
 3. If no roof insulation is specified, provide a suitable dry sheathing paper, followed by an approved base sheet nailed appropriately for the specified roof system, with 1 inch (25 mm) diameter caps and annular nails unless otherwise required by the applicable Code or Approval agency.
 4. Insulation is to be mechanically attached in accordance with the insulation

5. manufacturer's recommendations unless otherwise required by the applicable Code. In all retrofit roof applications, it is required that deck be inspected for defects. Any defects are to be corrected per the deck manufacturer's recommendations and standards of the APA/Engineered Wood Association prior to new roof application.
6. Light metal wall ties or other structural metal exposed on top of the wood deck shall be covered with one ply of a heavy roofing sheet, such as HPR Glasbase Base Sheet, extending 2 inches to 6 inches (51 mm to 152 mm) beyond the metal in all directions. Nail in place before applying the base ply.

3.3. INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.4. INSULATION INSTALLATION:

- A. Attachment of Insulation:
 1. Mechanically fasten base layers of insulation to deck in accordance with roofing manufacturer's wind uplift calculation.
 - a. Use fastener type and fastening pattern as required to achieve wind resistance specified.
 2. Embed tapered insulation, crickets and cover board as specified in 07220 Roof Insulation and in accordance with roofing and insulation manufacturers' instructions.
 3. Cover board shall be installed as specified in Section 07220 Roof Insulation.
- B. Provide insulation with joints staggered minimum 6 inch from joints of proceeding layer.

- C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- E. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches.
- G. Do not apply more insulation than can be covered with membrane in same day.

3.5. INSTALLATION OF COLD APPLIED ROOF SYSTEM

- A. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
 - 1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 - 2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 - 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
 - 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 - 5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 - 6. Install base flashing ply to all perimeter and projection details.
 - 7. Allow the one ply of base sheet to cure at least 30 minutes before installing the KEE membrane.
 - 8. Thermoplastic Cap Ply: Allow the membrane to relax before installing. Install in interply adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plies specified. Shingle in proper direction to shed water on each large area of roofing.
 - 9. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
 - 10. All field seams must be clean and dry prior to initiating any field welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.
 - 11. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
 - 12. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.
 - 13. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.
 - 14. Follow local code requirements for electric supply, grounding and surge protection. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.

15. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- B. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- C. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
 1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.
- D. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- E. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- F. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
 1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
 5. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 6. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 7. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

- G. Flashing Cap Ply:
1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
 6. All stripping shall be installed prior to flashing cap sheet installation.
 7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- H. Roof Walkways: Provide walkways in areas indicated on the Drawings or at a minimum;
- a. Install walk way pads in a path from all roof access points to and around all HVAC and serviceable mechanical equipment, to and around roof hatches, and as designated by the owner.

3.6. INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

- A. Fabricated Flashings: Fabricated flashings and trim are provided as specified in Section 07620.
1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the Copper Development Association "Copper in Architecture - Handbook" as applicable.
- B. Metal Edge:
1. Inspect the nailers to assure proper attachment and configuration.
 2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
 3. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
 4. Install new Clad Metal edge hooked to continuous cleat. Fasten flange to wood nailers every 3 inches (76 mm) o.c. staggered.
 5. Strip in flange with KEE Stripping Membrane with 6 inches (152 mm) on to the field of roof. Assure ply laps do not coincide with metal laps.
- C. Roof Edge With Gutter:
1. Inspect the nailer to assure proper attachment and configuration. Increase slope at metal edge by additional degree of slope in first board.
 2. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
 3. Install gutter and strapping.
 4. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
 5. Install new Clad Metal metal edge hooked to continuous cleat and Fasten flange to

- wood nailer every 3 inches (76 mm) o.c. staggered.
 6. Strip in flange with KEE Membrane Stripping ply covering entire flange. Assure ply laps do not coincide with metal laps.
- D. Scupper Through Wall (Overflow):
1. Inspect the nailer to assure proper attachment and configuration.
 2. Run one ply over nailer up the overflow, into the scupper hole and up flashing as in typical wall flashing detail. Assure coverage of all wood nailers.
 3. Install scupper box in a 1/4 inch (6 mm) bed of mastic. Assure all box seams are soldered and have a minimum 4 inch (101 mm) flange. Make sure all corners are closed and soldered.
 4. Fasten flange of scupper box every 3 inches (76 mm) o.c. staggered.
 5. Strip in flange scupper box with KEE Stripping ply covering entire area with 6 inch (152 mm) overlap on to the field of the roof and wall flashing.
- E. Coping Cap:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm).
 2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 3. Attach tapered board to top of wall.
 4. Install base flashing ply covering entire wall and wrapped over top of wall and down face with 6 inches (152 mm) on to field of roof and set in cold adhesive. Nail membrane at 8 inches (203 mm) o.c.
 5. Install continuous cleat and fasten at 6 inches (152 mm) o.c. to outside wall.
 6. Install new metal coping cap hooked to continuous cleat.
 7. Fasten inside cap 24 inches (609 mm) o.c. with approved fasteners and neoprene washers through slotted holes, which allow for expansion and contraction.
- F. Surface Mounted Counterflashing:
1. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 2. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 3. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
 4. Install KEE Membrane ply in adhesive over the base flashing ply, 9 inches (228 mm) on to the field of the roof.
 5. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
 6. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.
- G. Curb Detail/Air Handling Station:
1. Minimum curb height is 8 inches (203 mm) above finished roof height. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 2. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
 3. Install a KEE Membrane ply in adhesive over the base flashing ply, 9 inches (228 mm) on to the field of the roof.
 4. Install pre-manufactured counterflashing with fasteners and neoprene washers or per manufacturer's recommendations.
 5. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

- H. Roof Drain:
 - 1. Plug drain to prevent debris from entering plumbing.
 - 2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
 - 3. Install base flashing ply (40 inch square minimum) in bitumen.
 - 4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch (6 mm) bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
 - 5. Run roof system plies over drain. Cut out plies inside drain bowl.
 - 6. Install modified membrane (48 inch square minimum) in bitumen.
 - 7. Install clamping ring and assure that all plies are under the clamping ring.
 - 8. Remove drain plug and install strainer.
- I. Plumbing Stack:
 - 1. Minimum stack height is 12 inches (609 mm).
 - 2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 - 3. Set lead/copper flashing in 1/4 inch (6 mm) bed of mastic.
 - 4. Caulk the intersection of the membrane with elastomeric sealant.
 - 5. Install KEE Membrane Boot, clamp and seal the top with urethane sealant.
- J. Heat Stack:
 - 1. Minimum stack height is 12 inches (609 mm).
 - 2. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 - 3. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
 - 4. Install base flashing ply in bitumen.
 - 5. Install modified membrane in bitumen.
 - 6. Caulk the intersection of the membrane with elastomeric sealant.
 - 7. Install new collar over cape. Weld collar or install stainless steel draw brand.

3.7. CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.8. PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.9. FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at start-up and two (2) days per week through project completion. Provide a final inspection upon completion of the Work.
 - 1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 - 2. Field observations shall be performed by a representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 - 3. Provide observation reports from the representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.10. SCHEDULES

- A. Base (Ply) Sheet: Flexbase 80 Base Sheet (80 mil): 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane reinforced with a fiberglass scrim, performance requirements according to ASTM D 6163.
 - a. Tensile Strength, ASTM D 5147
 - 1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
 - 2. 50mm/min. @ 23 +/- 2 deg. C MD 8.75 kN/m XD 8.75 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2. 50mm/min. @ 23 +/- 2 deg. C MD 444.8 N XD 444.8 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7.0 % XD 7.0 %
 - 2. 50mm/min @ 23 +/- 2 deg. C MD 7.0 % XD 7.0 %
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-28.8 deg. C)
- B. Thermoplastic/Modified Cap (Ply) Sheet:
 - 1. KEE-Stone FB 60: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim. ASTM D6754
 - a. Breaking Strength, ASTM D 751, Proc. B, strip
 - 1. 375 lbf. (1,668 N)
 - b. Tear Strength ASTM D 751
 - 1. 120 lbf. min. (534 N)
 - c. Elongation at Break (%), ASTM D 751, Proc. B, Strip
 - 1. 40.0%
- C. Interply Adhesive's:
 - 1. Green-Lock Plus Membrane Adhesive: Cold applied solvent free membrane adhesive: zero V.O.C. compliant performance requirements:
 - a. Non-Volatile Content ASTM D 4586 100%
 - b. Density ASTM D 1475 11.4 lbs./gal. (1.36 g/m3)
 - c. Viscosity Brookfield 20,000-50,000 cPs.
 - d. Flash Point ASTM D 93 400 deg. F min. (232 deg. C)
 - e. Slope: up to 3:12

2. Flashing Ply Adhesive: Green-Lock Plus Flashing Adhesive: Cold applied solvent free flashing adhesive: zero V.O.C.
 - a. Non-Volatile Content ASTM D 4586 100%
 - b. Density ASTM D 1475 11.8 lbs./gal. (1.17 g/cm³)
 - c. Viscosity Brookfield 400,000 cPs.
 - d. Flash Point ASTM D 93 400 deg. F min. (232 deg. C) G
 3. KEE-Lock Spatter Spray: Dual component, single bead (spatter applied) urethane insulation/membrane adhesive.
 - a. Tensile Strength (ASTM D 412) 250 psi
 - b. Density (ASTM D 1875) 8.5 lbs./gal.
 - c. Viscosity (ASTM D 2556) 22,000 - 60,000 cP
 - d. Peel Strength (ASTM D 903) 17 lb./in.
 - e. Flexibility (ASTM D 816) Pass @ -70 deg. F (-56.7 deg. C)
 4. Flashing Ply Adhesive: KEE-Lock WB Bonding Adhesive: Contact bonding adhesive specifically designed for bonding KEE membranes and flashings to vertical substrates.
 - a. Coverage: 1 - 1.5 gal per sq both sides
 - b. Color: Blue
 - c. VOC: 0 g/l
- D. Surfacing:
1. Flashing Membrane Sheet:
 2. KEE-Stone NF 60 Flashing
 1. Breaking Strength: 375
 2. Tear Strength: 145 x 200
 3. Color: White
 4. Thickness: 60 mil

3.10 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
1. Owner: _____.
 2. Address: _____.
 3. Building Name/Type: _____.
 4. Address: _____.
 5. Area of Work: _____.
 6. Acceptance Date: _____.
 7. Warranty Period: Five Years.
 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 120 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

SECTION 072200

ROOF INSULATION

PART 1 – GENERAL

1. RELATED DOCUMENTS

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

2. SUMMARY

- A. Section includes roof insulation over the properly prepared deck substrate.
- B. Related Sections:
 - 1. Section 075050 - KEE Membrane Roofing

3. REFERENCES

- A. American Society for Testing and materials (ASTM):
 - 1. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
 - 2. ASTM C208 Standard Specification for Cellulosic Fiber Insulation Board.
 - 3. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
 - 4. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
 - 5. ASTM C1396 Standard Specification for Gypsum Wallboard.
 - 6. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 7. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
 - 8. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
 - 9. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation.
 - 10. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
 - 11. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).
 - 12. ASTM D312 Standard Specification for Asphalt Used in Roofing.
 - 13. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
 - 14. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
 - 15. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
 - 16. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
 - 17. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.

18. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
19. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.
- B. Factory Mutual Research (FM):
 1. Roof Assembly Classifications.
- D. National Roofing Contractors Association (NRCA):
 1. Roofing and Waterproofing Manual.
- E. Underwriters Laboratories, Inc. (UL):
 1. Fire Hazard Classifications.
- F. Warnock Hersey (WH):
 1. Fire Hazard Classifications.
- G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
- H. Steel Deck Institute, St. Louis, Missouri (SDI)
- I. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)
- J. Insulation Board, Polyisocyanurate (FS HH-I-1972)
- K. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.1. SUBMITTALS

- A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures. 013000.
- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
- C. Provide a sample of each insulation type.
- D. Shop Drawings
 1. Submit manufacturer's shop drawings indicating complete installation details of tapered insulation system, tapered insulation crickets, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
 2. Shop drawing shall include: Outline of roof, location of drains, a complete board layout of tapered insulation components, thickness and the average "R" value for the completed insulation system.
- E. Certification
 1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
 2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.
 3. Roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.

4. Roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.
5. Wind uplift calculation, per CBC, Chapter 15, 1504 utilizing ASCE 7-10. Wind uplift shall be provided by the roofing system manufacturer. Calculation shall be reviewed by a CA licensed Structural II engineer.

1.2. QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108.
- B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- C. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM 1-90.
- D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.3. DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
- C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).
- D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

1.4. WARRANTY

- A. Provide warranty coordinated with the requirements of other sections specifying roof products.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

- A. Refer to Division 01 Section "Common Product Requirements."
- B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

- C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be reviewed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
 2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.
 3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
 4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

- A. Thermal Insulation Properties and Approved Insulation Boards.
1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Thickness: 4"
 - c. R-Value: 23.6
 - d. Attachment: Mechanically attached per roofing manufactures ASCE 7-16 Wind Uplift requirements.
 - e. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
 - f. Acceptable Products:
 - 1) ENRGY-3; Johns Manville
 - 2) H-Shield; Hunter
 - 3) EnergyGuard; GAF
 - 4) Approved Equivalent
 2. Tapered Polyisocyanurate Roof Insulation; ASTM C1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Thickness: Slope to drain
 - c. Average R-Value:
 - d. Tapered Slope: (Field) N/A
 - e. Tapered Slope: (Crickets) 1/2"
 - f. Attachment: Mechanically attached per roofing manufactures ASCE 7-16 Wind Uplift requirements.
 - g. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - h. Acceptable Products:
 - 1) ENRGY 3; Johns Manville
 - 2) EnergyGuard; GAF
 - 3) H-Shield; Hunter
 - 4) Approved Equivalent

3. High Density Six Side Primed Fiberboard Roof insulation; ASTM C208
 - a. Qualities: Rigid, composed of interlocking fibers factory blended treated with asphalt on six sides.
 - b. Board Size: Four feet by Eight feet (4' x 8')
 - c. Thickness: N/A
 - d. Attachment: Mechanically attached per roofing manufacturers ASCE 7-16 wind uplift requirements.
 - e. Compliances: UL, WH, FM listed under Roofing Systems. Federal Specification LLL-I-535-B.
 - f. Acceptable Manufacturers:
 - 1) Blue Ridge; Celotex
 - 2) Temple Inland
 - 3) GAF Building Materials Corporation
 - 4) Georgia-Pacific
 - 5) Approved Equivalent

4. Dens-Deck Prime Roof Board
 - a. Qualities: Nonstructural glass mat faced, noncombustible, water-resistant treated gypsum core panel.
 - b. Board Size: Four feet by Eight feet (4'x8').
 - c. Thickness: 1/2"
 - d. R-Value: .56
 - e. Attachment: Adhered with Garland Insuloc HR Insulation Adhesive per roofing manufacturers ASCE 7-16 wind uplift requirements.
 - f. Compliances: UL, WH or FM listed under Roofing Systems.

2.3 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
 1. Acceptable Manufacturers:
 - a. The Garland Company, Inc.
 - b. Celotex
 - c. Johns Manville
 - d. GAF
 - e. Approved Equivalent

- B. Protection Board: Pre-molded semi-rigid asphalt composition board one half (1/2) inch.

- C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

- D. Asphalt: ASTM D312, Type III Steep Asphalt.

- E. Roof Deck Insulation Adhesive: Insul-Lock HR - Dual-component, high rise foam adhesive with 45% rapidly renewable material content as recommended by insulation manufacturer and approved by FM indicated ratings.
 1. Tensile Strength (ASTM D412).....250 psi

2. Density (ASTM D1875).....8.5 lbs./gal.
3. Viscosity (ASTM D2556).....22,000 to 60,000 cP.
4. 2 `Peel Strength (ASTM D903).....17 lb/in.
5. 3 `Flexibility (ASTM D816).....Pass @ -70°F

- F. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
1. Factory Mutual Tested and Approved with three (3) inches coated disc for I-90 rating, length required to penetrate metal deck one inch.
 2. Screws: Concealor #14-13 DP1 as specified per ASCE 7 calculations.

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

- A. Comply with requirements of Division 01 Section “Common Execution Requirements.”

3.2. EXAMINATION

- A. Roofing contractor shall be responsible to verify that roof framing system is complete and ready to receive insulation system. Do not proceed with installation until unsatisfactory conditions have been corrected.
1. Verify that work which penetrates roof deck has been completed.
 2. Verify that wood nailers are properly and securely installed.
 3. Verify the roof deck has proper slope to drain.
 4. Verify that penetrations are a minimum of 24” away from all waterways and will not obstruct the proper roof drainage.
 5. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
 6. Do not proceed until defects are corrected.
 7. Do not apply insulation until substrate is sufficiently dry.
 8. Broom clean substrate immediately prior to application.
 9. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
 10. Verify that temporary roof has been completed (IF REQUIRED)

3.3 INSTALLATION

- A. Comply with built-up roofing manufacturer's written instructions, as submitted and reviewed by Architect during the submittal process, for installing roof insulation.
- B. (Wood Roof Decks Only) Install one lapped rosin sheet course and mechanically fasten to substrate according to built-up roofing manufacturer's written instructions and as called for in these specifications and on the drawings.
- 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. 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.
- E. 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.
- F. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- G. 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 to resist uplift pressure at corners, perimeter, and field of the roof.
 - a. Field: 16 screws per 4 foot by 8 foot panel (2 square feet per screw).
 - b. Perimeter: 24 screws per 4 foot by 8 foot panel (1.33 square feet per screw).
 - c. Corners: 32 screws per 4 foot by 8 foot panel (1 square foot per screw).
 - 2. Set each subsequent layer of insulation in insulation adhesive adhered per the roofing system manufactures recommendations.
- H. 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 adhere in place per manufacturers instructions. Tape joints if required by the roofing manufacturer.
- I. Apply insulation adhesive to underside and immediately bond cover board to substrate.
- J. Approved base layer of insulation board shall be fully attached to the deck with an approved mechanical fastening system, (all subsequent layers are to be adhered). As a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation ASCE 7-16.
- K. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.
- L. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the ASCE 7-16 requirements. Placement of any fastener from edge of

insulation board shall be a minimum of three inches, and a maximum of six (6) inches.

- M. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal, wood and structural concrete decks where not specified by the manufacturer. For gypsum and cement-wood fiber decks, penetration shall be determined from pull-out test results with a minimum penetration of one and one-half (1 ½) inches.
- N. Gypsum and cementitious wood fiber decks: Where the roof deck is visible from the building interior, the contractor shall ensure no penetration of fasteners through underside of the deck. Any holes or spalling caused by fastener installation shall be repaired by the roofing contractor. Where the new roof system thickness exceeds an amount so that a minimum of 1 ½ of penetration cannot be achieved with an Olympic TB Fastener, or approved equivalent, then (and only then) toggle bolts may be used to secure installation to the deck.
- O. Tape joints of insulation as per manufacturer's requirements.
- P. Attachment with Insulation Adhesive Approved by Factory Mutual (FM).
- Q. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.
- R. Apply insulation adhesive directly to the substrate using a ribbon pattern with one quarter to one half (1/4-1/2) inch wide beads 12 inches o.c., using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge.
- S. Immediately place insulation boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing insulation boards.
- T. Briefly step each board into place to ensure contact with the adhesive. Substrates with irregular surfaces may prevent the insulation board from making positive contact with the adhesive. Relief cuts or temporary weights may be required to ensure proper contact.
- U. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
- V. Tape joints of insulation as per manufacturer's requirements.

3.4 CLEANING

- A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

5. CONSTRUCTION WASTE MANAGEMENT

- A. Remove and properly dispose of waste products generated during installation.
Comply with requirements of authorities having jurisdiction.

END OF SECTION

APPENDIX D – FLAT ROOF TECHNICAL SPECS (PVC)

SECTION 07 54 19 – POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 – GENERAL

1.1 SUMMARY

A. This Section includes:

1. Mechanically fastened or adhered single-ply PVC roofing membrane system.
2. Flashings, accessories, and related sheet metal work.
3. Vapor retarder (if specified).
4. Insulation and cover board.

1.2 REFERENCES

- A. ASTM D4434 – Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
- B. ASTM E108 – Fire Tests of Roof Coverings.
- C. FM Global 4470 – Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, and Liquid-Applied Roof Assemblies.
- D. NRCA – The NRCA Roofing Manual.
- E. UL 790 – Standard for Standard Test Methods for Fire Tests of Roof Coverings.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's specifications, installation instructions, and warranty info.
- B. Shop Drawings: Roof plan, membrane layout, seam locations, flashing details.
- C. Samples: 12"x12" membrane sample, flashing sample, edge metal finish sample.
- D. Certificates: Installer qualifications and manufacturer approval.
- E. Warranty: Sample warranty showing 20-year system coverage.

1.4 QUALITY ASSURANCE

- A. Manufacturer shall have minimum 10 years of experience producing PVC roofing systems.
- B. Installer shall be certified by the membrane manufacturer.
- C. Pre-installation Conference required.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in original packaging with labels intact.
- B. Store rolls on pallets above ground. Cover with breathable tarps.
- C. Do not store in temperatures exceeding 90°F (32°C).

1.6 WARRANTY

- A. Manufacturer's 20-year no-dollar-limit (NDL) warranty covering labor and materials.
- B. Installer's 2-year workmanship warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Approved manufacturers:

1. Carlisle SynTec
2. Sika Sarnafil
3. Johns Manville
4. GAF
5. Versico

Or approved equal.

2.2 MEMBRANE MATERIALS

A. PVC Membrane:

1. Thermoplastic membrane conforming to ASTM D4434, Type III (reinforced).
2. Minimum thickness: 60 mils.
3. Color: White (or as indicated).
4. Solar reflectance: ≥ 0.80 .
5. Seam strength: ≥ 200 lbf/in.
6. Cold crack resistance: -40°F .

2.3 ACCESSORIES

- A. Flashing Membrane: Manufacturer's reinforced and non-reinforced PVC flashing sheets.
- B. Termination Bar, Fasteners, Plates: Manufacturer-approved, corrosion-resistant.
- C. Walkway Pads: PVC-compatible pads heat-welded to membrane.
- D. Adhesives and Sealants: Low-VOC, manufacturer-approved.

2.4 INSULATION

A. Polyisocyanurate Board (ISO):

1. Minimum R-value: R-5.7 per inch.
2. Total Thickness: 4" (2 layers, 2" each).
3. Compressive strength: ≥ 20 psi.

B. Cover Board:

1. High-density polyiso or gypsum-fiber cover board.
2. Thickness: 1/2".

2.5 FASTENERS

- A. Corrosion-resistant fasteners approved by roofing system manufacturer.
- B. Shall meet FM 4470 and pull-out resistance requirements per deck type.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify substrate is clean, dry, and smooth.
- B. Confirm roof deck condition is acceptable for roofing application.

3.2 PREPARATION

- A. Remove debris and incompatible materials.
- B. Prime substrate where required by manufacturer.

3.3 INSTALLATION – GENERAL

- A. Install per manufacturer's printed instructions and details.
- B. Ensure proper slope for drainage (minimum 1/4" per foot recommended).
- C. Heat-weld all seams with approved equipment. Perform probe test daily.

3.4 INSULATION INSTALLATION

- A. Lay insulation boards with staggered joints, fully attached per wind uplift requirements.
- B. Adhere or mechanically fasten per manufacturer's FM approvals.

3.5 MEMBRANE INSTALLATION

- A. Fully adhere or mechanically fasten membrane per approved layout.
- B. Overlap seams minimum 2 inches and heat weld.
- C. Install flashings, curbs, penetrations per details.
- D. Seal all terminations and edges.

3.6 FIELD QUALITY CONTROL

- A. Daily inspections of seams, penetrations, and flashings.
- B. Final inspection by manufacturer's technical rep required for warranty issuance.

3.7 CLEANING AND PROTECTION

- A. Remove scraps and debris daily.
- B. Protect membrane from traffic and damage post-installation.
- C. Install temporary walk paths as required.

APPENDIX E – HVAC INSTALLATION

SECTION 23 74 13 – PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS

PART 1 – GENERAL

- **Section Includes:** Furnishing and installing factory-assembled rooftop air-handling units.
- **Related Sections:**
 - Division 23 HVAC Piping and Ductwork
 - Division 26 Electrical

PART 2 – PRODUCTS

- **Manufacturers:**
 - ICP Carrier, or pre-approved equal.
- **Performance Requirements:**
 - Capacity: 7.5 tons cooling / 125,000 BTU heating
 - Voltage: 208/230V, 3-Phase
 - Controls: Units to be provided with factory-installed digital control panel; compatible with existing building thermostat setup unless otherwise noted.
- **Construction:**
 - Weatherproof cabinet
 - Hinged access panels
 - Curb-mounted

PART 3 – EXECUTION

- Install per manufacturer instructions and applicable codes.
- Coordinate with structural and roofing contractor to maintain roof watertightness.
- Balance supply/return airflows to match existing design.
- Field wiring and piping shall be performed in compliance with NEC and local code.

SECTION 23 56 00 – EVAPORATIVE COOLING EQUIPMENT

PART 1 – GENERAL

- **Section Includes:** One ducted evaporative cooler and curb adapter for rooftop installation.

PART 2 – PRODUCTS

- **Evaporative Cooler:**
 - Voltage: 115V, Single Phase
 - Motor: 2-speed
 - Type: Down discharge ducted cooler
 - Includes curb adapter for reuse of existing curb
- **Manufacturers:**
 - Champion, Phoenix, MasterCool, or equivalent.

PART 3 – EXECUTION

- Install per manufacturer's guidelines.
- Provide secure connections to existing curb and ductwork.
- Ensure proper drainage and overflow provisions.

APPENDIX F – MECHANICAL EQUIPMENT SCREENING

SECTION 089100 ALUMINUM LOUVERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Aluminum louvers as shown on the Drawings and as specified herein, including but not necessarily limited to the following:
 - 1. Continuous blade type, architectural vision louvers.
 - 2. Concealed snap-in support clips and accessories.
 - 3. Factory-applied finish system to louver blades.
 - 4. Field measurements and verification of all openings and all conditions of the louver installations.

1.2 REFERENCES

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- C. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- D. ASTM B 449 - Standard Specification for Chromates on Aluminum.
- E. ASTM D 1730 - Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting.
- F. ASTM D 2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.
- G. ASTM D 4214 - Standard Test Methods for Evaluating the Degree of Chalking of Exterior Paint Films.

1.3 COORDINATION

- A. Coordinate Work with other operations and installation of roofing materials to avoid damage to installed insulation and membrane materials.

1.4 ACTION SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Load tables showing louver span capacities.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.

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089100-1

- B. Shop Drawings:
 - 1. Layout and erection drawings showing typical cross sections and dimensioned locations of all louver blades, trees, splices and corners. Include erection drawings, elevations, and details where applicable.
- C. Selection Samples:
 - 1. For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Verification Samples:
 - 1. For each product specified, two samples, minimum 12 inches (305 mm) long, representing actual product shape and dimensions.

1.5 INFORMATIONAL SUBMITTALS

- A. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- B. Warranties: 3 signed copies of the following:
 - 1. Louver Units including paint finish.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer with a minimum five years documented experience in producing architectural louver systems.
- B. Provide aluminum louvers by a firm having undivided responsibility for the entire aluminum louver system design, fabrication and installation, except as otherwise specified herein.
- C. Provide aluminum louvers in strict accordance with state and local building codes and ordinances and conforming to applicable wind load factors relative to framing and anchorage.
- D. Pre-Installation Meeting:
 - 1. Convene at job site, at least seven calendar days prior to scheduled beginning of construction activities of this section, to review requirements of this section.
 - 2. Require attendance by representatives of the installing subcontractor (who will represent the system manufacturer), the mechanical subcontractors and other entities affected by construction activities of this section.
 - 3. Notify Architect four calendar days in advance of scheduled meeting date.

1.7 DELIVERY, HANDLING AND STORAGE

- A. Deliver louver components to the project site clearly marked for proper identification.
- B. Receive, handle and store materials in conformance with the manufacturers printed instructions.
- C. Store louver components in accordance with manufacturer's instructions, above ground, in dunnage and protected from weather, construction activities and other causes of damage or loss.

- D. Handling: Use a forklift or crane to move material. Do not lift the bundles by the metal bands.
1. Fork Lift: Spread the forks as far as possible to balance the load. Drive slowly when moving long bundles over uneven surfaces to avoid tipping the load
 2. Crane: Position the canvas sling straps so that the space between the straps is at least 1/3 the length of the bundle. Use sling straps with looped ends running one end of the strap through the loop at the other end to cinch the bundle when lifted. When setting the load on the roof, put wood blocks under it to protect the roof and allow space to remove the sling straps.
 3. Roof Placement: Spread the bundles and crates out as much as possible to avoid overloading the roof structure. Place the material directly over major supports such as beams or trusses.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify louver openings by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating louvers without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.9 WARRANTY

- A. Louvers:
1. Provide written warranty, stating that the louvers, exclusive of paint finish, will be free of faults and defects for a period of:
 - a) Products installed on projects located two miles or greater from salt or brackish bodies of water: Twenty (20) years.
 - b) Products installed on projects located greater than one mile but less than two miles from salt or brackish bodies of water will be warranted for (5) years, except for aluminum, or stainless-steel products which will be warranted for (20) years.
 - c) Products installed on projects located one mile or less from salt or brackish bodies of water will be warranted for (3) years, except for aluminum, stainless steel Products which will be warranted for (20) years.
 - d) Parts only orders purchased without design, engineering calculations and shop drawings provided by Seller: (1) year.
 2. Provide warranty signed by the louver manufacturer and installing contractor.
- B. Paint Finish:
1. Provide written warranty stating that the paint finish applied on all louver components will retain its film integrity, color and chalk as defined by AAMA 2605 for a period of:

- a) Products installed on projects located 1 mile or greater from salt or brackish bodies of water: Twenty (20) years.
 - b) Products installed on projects located less than 1 mile from salt or brackish bodies of water: Three (3) years.
- 2. Provide warranty signed by the louver manufacturer and paint finish applicator (if separate from manufacturer).
- C. The above warranties are in addition to, and not a limitation of, other rights the Owner may under the Contract Documents.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Design Loads: Comply with Building Code for site location and building height.
 - 1. Design to resist ASCE 7 - Minimum Design Loads for Buildings and Other Structures, using the latest published ASCE version.
 - 2. Design all materials, assembly and attachments to resist snow, wind, suction and uplift loading at any point without damage or permanent set.
- B. Structural Design: Prepare structural design calculations for louver assemblies including blades, clips, trees, fasteners and attachment to structure.
 - 1. Design and provide louvers to withstand a wind load of 50 psf inward and 40 psf outward with a deflection in both vertical and horizontal members not to exceed $L/180$.
- C. Thermal Movement: Normal thermal movement is defined as that resulting from a 120 degrees F maximum change (range) in ambient temperature. Base design calculations on actual surface temperatures of metals due to both solar heat gain and night time sky heat loss.
- D. Anchors and Connections:
 - 1. Anchors, connections and assemblies connecting the louvers and associated fabrications to the supporting construction are shown on the Drawings as suggested locations for the louver manufacturer/installer's information. The louver manufacturer/installer is responsible for the structural design and placement of the connections and anchors, including all connecting hardware, accessories and reinforcing necessary for fabrication, and installation of the louvers and associated fabrications.
 - 2. The louver manufacturer is to notify the Architect in writing prior to the submittal of shop drawings of any changes in the proposed locations of connections and anchors.
 - 3. The Architect's review of shop drawings is not to be construed as removing responsibility from the louver manufacturer/installer for structural failures related to design, fabrication, installation, and fabrication services.

2.2 MANUFACTURERS

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089100-4

- A. Acceptable Manufacturer: RoofScreen Mfg., which is located at: 347 Coral St. ; Santa Cruz, CA 95060; Toll Free Tel: 866-766-3727; Tel: 831-421-9230; Fax: 866-253-0738; Email: request info (info@roofscreen.com); Web: www.roofscreen.com.
- B. Requests for substitutions will be considered in accordance with Special Provisions Section 5.06 "Submittals".

2.3 PRODUCTS

- A. Basis-of-Design Manufacturer and Louver: RoofScreen Mfg.
 - 1. VisionGuard L10 Angled Louver.
 - 2. VisionGuard L20 Slatted Louver.
 - 3. VisionGuard L30 Curved Louver.

2.4 MATERIALS

- A. Aluminum Extrusions: ASTM B 221, 6063-T6 alloy and temper.
- B. Fasteners:
 - 1. Provide exposed fasteners of stainless steel or carbon steel with factory applied protective coating, with finish color coating to match the finish on aluminum.
 - 2. Provide fasteners not exposed to view of stainless steel or carbon steel with factory applied protective coating.

2.5 FABRICATION

- A. Fabricate louvers with close-fitting, field-made splice joints in blades designed to permit expansion and contraction without deforming blades or framework and with supporting members and hardware concealed from front edges of blades so blades have continuous appearance.
- B. General:
 - 1. Fabricate all units to produce uniform sight lines and to be level, plumb and in same plane as adjacent panels.
 - 2. Accurately fabricate all joints for proper fit.
 - 3. Protect exposed surfaces against damage from scratches and discoloration.
- C. Louvers:
 - 1. Fabricate continuous blade louvers from minimum 0.1 inch thick extruded aluminum to shapes and configurations shown on the Drawings.
 - 2. Provide support clips from minimum 0.125 inch thick extruded aluminum to comply with specified performance criteria and manufacturer's fabrication procedures and standards.
 - 3. Provide vertical supports ("trees") from minimum 3 inch by 3 inch by 0.188 inch thick extruded aluminum angles to comply with specified performance criteria and manufacturer's fabrication procedures and standards, at spacings not further apart than recommended by manufacturer.
 - 4. Corners:
 - a. Provide inside and outside corners fabricated from 6 inch by 6 inch by 0.100 inch thick aluminum trim, painted to match louver blades, to be fastened with exposed fasteners.

- b. Provide inside and outside mitered louver blades 24 inches in length to be installed butted together in field to form louver corners.
 - c. Provide inside and outside corners fabricated from mitered and welded louver blades that extend 24 inches in each direction. Finish corners after welding is complete.
- D. Provide all accessories and materials for fabrication, assembly and installation required to provide a complete and warranted louver installation.

2.6 FINISH OF ALUMINUM

- A. Provide all louver members and accessories free of scratches and serious blemishes affecting the finish system.
- B. Fluoropolymer Paint Finish: Factory finish all louver members, trims and mitered corners with thermoset fluoropolymer paint system in accordance with the manufacturer's printed requirements and performance specifications and the AAMA specification Ref. AAMA 2605 for Superior Performance Organic Coatings on Aluminum Extrusions and Panels.
- C. Color selection will be made by the Architect from manufacturer's standard colors.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine all surfaces to receive parts of the work specified herein. Verify all dimensions of in-place and subsequent construction. Installation of louvers constitutes acceptance of the existing conditions.

3.2 INSTALLATION

- A. Set all items in their correct locations as shown on the final reviewed shop drawings, level, square, plumb and at proper elevations and in alignment with other work.
- B. Assemble and anchor the various components to allow for expansion and contraction, maintaining a watertight installation.

3.3 CLEANING & PROTECTION

- A. After erection, protect exposed portions of the louvers from damage.
- B. Just prior to final acceptance, remove protective coverings and clean surfaces with plain water or if required, with a solution as recommended by manufacturer of finish coating system.
- C. Touch up finish coat system of all imperfections as recommended by manufacturer of finish coating system.
- D. Remove and replace any component that cannot be successfully repaired at no additional cost to the Owner.

END OF SECTION