



IRVINE UNIFIED SCHOOL DISTRICT

Bid No. 23/24-06MO, Unit Cost Pricing for Roofing

Bid Deadline: June 12, 2024 at 1:00 pm

Contact: Maria Ragas
Irvine Unified School District
5050 Barranca Parkway, Irvine, CA 92604
949-936-5212
Email: MariaRagas@iusd.org

Bid No. 23/24-06MO, Unit Cost Pricing for Roofing

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***Items must be completed, signed, and submitted as part of the bid. If required contract documents are not submitted the bidder will be declared non- responsive.**

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NOTICE CALLING FOR BIDS

District: **Irvine Unified School District**
Bid Deadline: **June 12, 2024 at 1:00 pm**
Place of Bid Receipt: **Irvine Unified School District
Maintenance & Operations Office
Attn: Joe Chapin
100 Nightmist, Irvine, CA 92618**

NOTICE IS HEREBY GIVEN that the Irvine Unified School District of Orange County, California, acting by and through its Governing Board, hereinafter referred to as "DISTRICT," will receive up to, but not later than, the above-stated bid deadline, sealed bids at the place identified above for the award of a contract for **Bid No. 23/24-06MO, Unit Cost Pricing for Roofing**.

Project documents will be available on May 30, 2024 as a download at <https://iusd.org/about/departments/business-services/purchasing/current-bids-rfps>.

In accordance with the provisions of Business and Professions Code Section 7028.15 and Public Contract Code Section 3300, the DISTRICT requires that the bidder possess the following classification(s) of contractor's license at the time the bid is submitted: **CLASS C39**. Any bidder not so licensed at the time of the bid opening will be rejected as nonresponsive.

Questions regarding the bid must be received via e-mail to the attention of Maria Ragas at MariaRagas@iusd.org by 11:00 am on June 7, 2024.

The DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.

Effective April 1, 2015, all contractors and subcontractors must be registered with the DIR to submit a bid for a public works project pursuant to Labor Code section 1725.5.

The California Department of Industrial Relations has determined the general prevailing rates of per diem wages for the locality in which the work is to be performed for the Project. Copies of these wage rate determinations, entitled Prevailing Wage Scale, are available at the following website: www.dir.ca.gov. It shall be mandatory upon the successful bidder to whom the contract is awarded, and upon any subcontractor listed, to pay not less than the said specified rates to all workers employed by them for the Project.

No bidder may withdraw any bid for a period of **sixty (60)** calendar days after the date set for the opening of bids.

Pursuant to Public Contract Code Section 22300, the Agreement will contain provisions permitting the successful bidder to substitute securities for any monies withheld by the DISTRICT to ensure performance under the Agreement or permitting payment of retentions earned directly into escrow.

Irvine Unified School District
Governing Board

By: Maria Ragas
Supervisor, Purchasing & Contracts

Advertise: Irvine World News; May 30 & June 6, 2024

INFORMATION FOR BIDDERS

WARNING:

READ THIS DOCUMENT CAREFULLY. DO NOT ASSUME
THAT IT IS THE SAME AS OTHER SIMILAR DOCUMENTS
YOU MAY HAVE SEEN, EVEN IF FROM THE SAME DISTRICT.

1. Preparation of Bid Form. Bids shall be submitted on the prescribed Bid Form, completed in full. All bid items and statements shall be properly and legibly filled out. Numbers shall be stated both in words and in figures where so indicated, and where there is a conflict in the words and the figures, the words shall control over the numbers. The signatures of all persons shall be in longhand and in ink. Prices, wording and notations must be in ink or typewritten.

2. Form and Delivery of Bids. The bid must conform and be responsive to all Project Documents and shall be made on the Bid Form provided, and the complete bid, together with any and all additional materials as required, shall be enclosed in a sealed envelope, addressed and hand delivered or mailed to the DISTRICT at: **100 Nightmist, Irvine, CA 92618**, and must be received on or before the bid deadline (Public Contract Code Section 20112) The envelope shall be plainly marked in the upper left hand corner with the bidder's name, the Project designation and the date and time for the opening of bids. **It is the bidder's sole responsibility to ensure that its bid is received prior to the bid deadline.** In accordance with Government Code Section 53068, any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened. At the time and place set forth for the opening of bids, the sealed bids will be opened and publicly read aloud. However, if prequalification of bidders is required pursuant to Public Contract Code Section 20111.5 only those sealed bids received from prequalified bidders shall be opened and publicly read aloud.

3. Bid Security. Each bid shall be accompanied by a bid security in the form of cash, a certified or cashier's check or bid bond in the amount of not less than **ten percent (10%)** of the total bid price payable to the DISTRICT and shall be given as a guarantee that the bidder, if awarded the contract, will execute the Agreement within **five (5)** working days after Notice of Award of the contract, and will furnish certificates and endorsements evidencing that the required insurance is in effect, the Workers' Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor's Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, all within **five (5)** working days of the notice of award of the contract or as otherwise requested in writing by the DISTRICT. It is understood and agreed that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. If the Bidder elects to furnish a bid bond as its Bid Security, the Bidder shall use the bid bond form included in the Project Documents.

4. Signature. Any signature required on Project Documents must be signed in the name of the bidder and must bear the signature of the person or persons duly authorized to sign these documents. Where indicated, if bidder is a corporation, the legal name of the corporation shall first be set forth, together with two signatures: one from among the chairman of the board, president or vice president and one from among the secretary, chief financial officer, or treasurer.

Alternatively, the signature of other authorized officers or agents may be affixed, if duly authorized by the corporation. Such documents shall include the title of such signatories below the signature and shall bear the corporate seal. Where indicated, in the event that the bidder is a joint venture or partnership, there shall be submitted with the bid certifications signed by authorized officers of each of the parties to the joint venture or partnership, naming the individual who shall sign all necessary documents for the joint venture or partnership and, should the joint venture or partnership be the successful bidder, who shall act in all matters relative to the Project for the joint venture or partnership. If bidder is an individual, his/her signature shall be placed on such documents.

5. Modifications. Changes in or additions to any of the bid documents, summary of the work bid upon, alternative proposals, or any other modifications which are not specifically called for by the DISTRICT may result in the DISTRICT'S rejection of the bid as being nonresponsive. No oral, telephonic, facsimile or electronic modification of any of the bid documents will be considered.

6. Erasures, Inconsistent or Illegible Bids. The bid submitted must not contain any erasures, interlineations, or other corrections unless each such correction is authenticated by affixing the initials of the person(s) signing the bid in the margin immediately adjacent to the correction. In the event of inconsistency between words and numbers in the bid, words shall control numbers. In the event that DISTRICT determines that any bid is unintelligible, illegible or ambiguous, the DISTRICT may reject such bid as being nonresponsive.

7. Examination of Site and Project Documents. At its own expense and prior to submitting its bid, each bidder shall examine all documents relating to the Project; visit the site and determine the local conditions which may in any way affect the performance of the work, including the general prevailing rates of per diem wages and other relevant cost factors; familiarize itself with all Federal, State and Local laws, ordinances, rules, regulations and codes affecting the performance of the work, including the cost of permits and licenses required for the work; make such surveys and investigations, including investigation of subsurface or latent physical conditions at the site or where work is to be performed, as it may deem necessary for performance of the work at its bid price ; determine the character, quality, and quantities of the work to be performed and the materials and equipment to be provided; and correlate its observations, investigations, and determinations with all requirements of the Project . The Project Documents show and describe the existing conditions as they are believed to have been used in the design of the work and are only provided as information for the bidder. The DISTRICT is not making any warranties regarding said information. The DISTRICT shall not be liable for any loss sustained by the successful bidder resulting from any variance between the conditions and design data given in the Project Documents and the actual conditions revealed during the bidder's pre-bid examination or during the progress of the work. **Bidder agrees that the submission of a bid shall be incontrovertible evidence that the bidder has complied with all the requirements of this provision of the Information for Bidders.**

8. Withdrawal of Bids. Any bid may be withdrawn, either personally or by written request signed by the bidder, at any time prior to the scheduled closing time for receipt of bids. The bid security for a bid withdrawn prior to the scheduled closing time for receipt of bids, in

accordance with this paragraph, shall be returned. No bidder may withdraw any bid for a period of **sixty (60)** calendar days after the date set for the opening of bids.

9. Agreement and Bonds. The Agreement, which the successful bidder will be required to execute is included in the bid documents and should be carefully examined by the bidder. The complete Agreement consists of the following but not limited to the Notice Calling for Bids, Information for Bidders, Bid Form, Bid Form Pricing Sheet, Noncollusion Declaration, Bid Bond, Tobacco Use of Policy, Workers' Compensation Certificate, Drug-Free Workplace Certification, Contractor's Certificate Regarding Non-Asbestos Containing Materials, Criminal Records Check Certification, District Rules and Regulations, Guarantee, Extract of Public Works Contract Award, Disabled Veteran Business Enterprises Certification, General Conditions, Specifications, W-9, all insurance requirements, any and all change orders, modifications, addenda and amendments, if any (hereinafter Bid Documents), thereof duly incorporated therein. All of above documents are intended to cooperate and be complementary so that any instructions or requirements called for in one and not mentioned in the other, or vice versa, are to be executed the same as if mentioned in all said documents. The intention of the documents is to include all labor, materials, equipment, transportation and services necessary for the proper delivery of all items called for in the Agreement.

10. Interpretation of Project Documents. If any bidder is in doubt as to the true meaning of any part of the Project Documents, or finds discrepancies in, or omissions from the Project Documents, a written request for an interpretation or correction thereof must be submitted to the DISTRICT via email to the attention of **Maria Ragas at MariaRagas@iusd.org by June 7, 2024 at 11:00 am.** No requests shall be considered after this time. The bidder submitting the written request shall be responsible for its prompt delivery. Any interpretation or correction of the Project Documents will be made solely at DISTRICT's discretion and only by written addendum duly issued by the DISTRICT, and a copy of such addendum will be hand delivered or mailed or faxed to each bidder known to have received a set of the Project Documents. No person is authorized to make any oral interpretation of any provision in the Project Documents, nor shall any oral interpretation of Project Documents be binding on the DISTRICT. If there are discrepancies of any kind in the Project Documents, the interpretation of the DISTRICT shall prevail. **SUBMITTAL OF A BID WITHOUT A REQUEST FOR CLARIFICATIONS SHALL BE INCONTROVERTIBLE EVIDENCE THAT THE BIDDER HAS DETERMINED THAT THE PROJECT DOCUMENTS ARE ACCEPTABLE AND SUFFICIENT FOR BIDDING AND COMPLETING THE WORK; THAT BIDDER IS CAPABLE OF READING, FOLLOWING AND COMPLETING THE WORK IN ACCORDANCE WITH THE PROJECT DOCUMENTS; AND THAT BIDDER AGREES THAT THE PROJECT CAN AND WILL BE COMPLETED ACCORDING TO THE DISTRICT'S TIMELINES AND ACCORDING TO THE PROGRESS SCHEDULE TO BE SUBMITTED BY THE SUCCESSFUL BIDDER INCORPORATING THE DISTRICT'S TIMELINES FOR COMPLETION OF THE PROJECT.**

11. Bidders Interested in More Than One Bid. No person, firm or corporation shall be allowed to make, or file, or be interested in more than one bid for the same work unless alternate bids are specifically called for by the DISTRICT. A person, firm, or corporation that has submitted a subproposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a proposal or quoting prices to other bidders or submitting a bid on the Project.

12. Award of Contract. The DISTRICT reserves the right to reject any or all bids, or to waive any irregularities or informalities in any bids or in the bidding process. The award of the contract, if made by the DISTRICT, will be by action of the Governing Board and to the lowest responsive and responsible bidder. The DISTRICT will determine low bid by the ‘base bid’ which will be the ‘*Grand Total Bid Amount*’. If two identical low bids are received from responsive and responsible bidders, the DISTRICT will determine which bid will be accepted pursuant to Public Contract Code Section 20117. In the event an award of the contract is made to a bidder, and such bidder fails or refuses to execute the Agreement and provide the required documents within **five (5)** working days after the notice of award of the contract to bidder, the DISTRICT may award the contract to the next lowest responsive and responsible bidder or reject all bidders.

13. Alternate Bids. Not Applicable.

14. Competency of Bidders. In selecting the lowest responsive and responsible bidder, consideration will be given not only to the financial standing but also to the general competency of the bidder for the performance of the Project. By submitting a bid, each bidder agrees that the DISTRICT, in determining the successful bidder and its eligibility for the award, may consider the bidder’s experience and facilities, conduct and performance under other contracts, financial condition, reputation in the industry, and other factors which could affect the bidder’s performance of the Project. To this end, each bid shall be supported by a statement of the bidder’s experience on the form entitled “INFORMATION REQUIRED OF BIDDER.”

The DISTRICT may also consider the qualifications and experience of subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the work. Operating costs, maintenance considerations, performance data and guarantees of materials and equipment may also be considered by the DISTRICT. In this regard, the DISTRICT may conduct such investigations as the DISTRICT deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of the bidder, proposed subcontractors, and other persons and organizations to do the work to the DISTRICT’s satisfaction within the prescribed time. The DISTRICT reserves the right to reject the bid of any bidder who does not pass any such evaluation to the satisfaction of the DISTRICT.

15. Listing Subcontractors. Each bidder shall submit, on the form furnished with the Project Documents, a list of the proposed subcontractors on this Project as required by the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100, et seq.). If alternate bids are called for and the bidder intends to use different or additional subcontractors, a separate list of subcontractors must be submitted for each such alternate bid. If the bidder fails to specify a subcontractor for any portion of the work in excess of one half (1/2) of one percent (1%) of the bidder’s total bid, the bidder agrees that he/she is fully qualified to perform that work and agrees to perform that portion of the work. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

16. Insurance and Workers' Compensation. The successful bidder shall be required to furnish certificates and endorsements evidencing that the required insurance is in effect as set forth in the Agreement. District may request that such certificates and endorsements are completed on

District provided forms. In accordance with the provisions of Section 3700 of the Labor Code, the successful bidder shall secure the payment of compensation to all employees. The successful bidder who has been awarded the contract shall sign and file with District prior to performing the work, the Workers' Compensation Certificate included as a part of the proposal documents. Labor Code section 1861.

a. Successful bidder shall, at bidder's sole cost and expense, maintain in full force and effect the following insurance coverages from a California licensed insurer with an A, VIII, or better rating from A.M. Best or an approved self-insurance program, sufficient to cover any claims, damages, liabilities, costs and expenses (including attorney fees) arising out of or in connection with bidder's fulfillment of the obligations under this bid:

i. Comprehensive General Liability Insurance, including bodily injury, property damage and contractual liability with minimum limits set by the DISTRICT. The policy may not contain an exclusion for sexual molestation or abuse coverage, may be waived by the District.

(a)	General Aggregate	\$2,000,000
(b)	Each Occurrence	\$1,000,000
(c)	Products/Completed Operations	\$1,000,000
(d)	Personal and Advertising Injury	\$1,000,000
(e)	Damage to Rented Premises	\$50,000
(f)	Medical Expense (any one person)	\$5,000

ii. Umbrella (excess) liability insurance coverage with a limit of \$3,000,000, unless waived by the DISTRICT. The policy may not contain an exclusion for sexual molestation or abuse coverage, may be waived by the District.

iii. Business Automobile Liability Insurance for owned, scheduled, non-owned, or hired automobiles with a combined single limit not less than \$1,000,000 per occurrence. (Required only if the bidder drives on behalf of the DISTRICT in the course of performing Services.)

iv. Professional Liability Insurance with a limit of \$1,000,000 per occurrence, unless waived by the DISTRICT and if applicable.

v. Workers' Compensation and Employers Liability Insurance in a form and amount covering bidder's full liability under the California Workers' Compensation Insurance and Safety Act and in accordance with applicable state and federal laws. The policy shall be endorsed with the insurer's waiver of rights of subrogation against the DISTRICT.

It should be expressly understood, however, that the coverage and limits referred to under i., ii., iii., and iv. above shall not in any way limit the liability of the bidder.

b. No later than five (5) days from execution of the Agreement by the DISTRICT and successful bidder, and prior to commencing the Services under this bid, bidder shall provide DISTRICT with certificates of insurance evidencing all coverages and endorsements required hereunder.

Successful bidder shall provide prior written notice to the DISTRICT thirty (30) days in advance of any non-renewal, cancellation, or modification of the required insurance. The certificates of insurance providing the coverages referred to in clauses i. and ii. above shall name DISTRICT, its Governing Board, officers, and employees, as additional insureds with appropriate endorsements. In addition, the certificates of insurance shall include a provision stating "Such insurance as is afforded by this policy shall be primary, and any insurance carried by DISTRICT shall be excess and noncontributory." Failure to maintain the above mentioned insurance coverages shall be cause for termination of the Agreement.

17. Contractor's License. If, at the time and date of the bid opening, bidder is not properly licensed to perform the Project in accordance with Division 3, Chapter 9, of the Business and Professions Code and the Project Documents, such bid will be rejected as nonresponsive. (Public Contract Code Section 3300) Pursuant to Business and Professions Code Section 7028.15, no payment shall be made for work or materials under the contract unless and until the Registrar of Contractors verifies to the DISTRICT that the bidder was properly licensed at the time the bid was submitted. Any bidder not so licensed is subject to penalties under the law and the contract will be considered void and DISTRICT shall have the right to bring an action against the unlicensed bidder awarded the contract for recovery of all compensation paid under the contract. (Business and Professions Code Section 7031(b)) If the license classification specified hereinafter is that of a "specialty contractor" as defined in Section 7058 of the Business and Professions Code, the specialty contractor awarded the contract for this work shall construct a majority of the work, in accordance with the provisions of Business and Professions Code Section 7059. The bidder may not use the contractor license of a third party for this bid.

18. Anti-Discrimination. In connection with all work performed under this Project, there shall be no unlawful discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, marital status, physical disability, mental disability, or medical condition. The successful bidder agrees to comply with applicable Federal and State laws including, but not limited to, the California Fair Employment and Housing Act, beginning with Government Code Section 12900 and Labor Code Section 1735. In addition, the successful bidder agrees to require like compliance by any subcontractors employed on the Project by such bidder.

19. Hold Harmless and Indemnification. The successful bidder awarded the contract will be required to indemnify and hold harmless the DISTRICT, its Governing Board, officers, agents, and employees as set forth in the Agreement.

20. Substitutions. Should the bidder wish to request any substitution for the materials, process, service, or equipment specified, the bidder shall be required to comply with Article 30 of the General Conditions.

21. Surety Qualifications for Bonds. Bidders shall ensure all surety companies have a minimum rating of "A-VIII," as rated by the current edition of Best's Key Rating Guide, published by A.M. Best Company, Oldwick, New Jersey 08858. Only California admitted surety insurers will be acceptable for the issuance of bonds. (Code of Civil Procedure Section 995.311) DISTRICT shall verify the status of the surety by one of the following ways: (1) printing out information from the website of the California Department of Insurance confirming the surety is an admitted surety insurer and attaching it to the bond, or (2) obtaining a certificate from the county clerk for the county in which the DISTRICT is located that confirms the surety is an admitted surety insurer and attaching it to the bond. Any admitted surety insurer who cannot satisfy the minimum rating specified above, but who satisfies the following requirements set forth in Code of Civil Procedure Section 995.660 shall be accepted and approved for the issuance of bonds:

(a) There must be on file in the office of the county clerk, for the county in which the DISTRICT is located, an unrevoked appointment, power of attorney, bylaws, or other instrument, duly certified by the proper authority and attested by the seal of the insurer authorizing the person who executed the bond to do so for and on behalf of the insurer within ten (10) calendar days of the insurer's receipt of a request to submit such document from the DISTRICT, and an original or certified copy of the document must be submitted to the DISTRICT.

(b) A certified copy of the certificate of authority of the insurer issued by the Insurance Commissioner must be submitted to the DISTRICT within ten (10) calendar days of the insurer's receipt of a request to submit such document from the DISTRICT.

(c) A certificate from the clerk of the county that the certificate of authority of the insurer has not been surrendered, revoked, cancelled, annulled, or suspended, and in the event it has, whether renewed authority has been granted must be submitted to DISTRICT within ten (10) calendar days of the insurer's receipt of a request to submit such document from the DISTRICT.

(d) Copies of the insurer's most recent annual statement and quarterly statement filed with the California Department of Insurance must be submitted to the DISTRICT within ten (10) calendar days of the insurer's receipt of a request to submit the statements.

22. Liquidated Damages. All work must be completed within the time limits set forth in the Project Documents. It is agreed that damages for the failure to complete the Project described herein within the time limits required are impossible to ascertain. Should the work not be completed within the specified time for completion, the successful bidder awarded the contract shall be liable for liquidated damages, payable to the DISTRICT, in an amount of **Five Hundred Dollars (\$500.00)** for each consecutive calendar day of delay in completion. Such damages shall be deducted from any payments due or to become due to the successful bidder. Government Code Section 53069.85, Civil Code Section 1671.

23. Drug-Free Workplace Certification. Pursuant to Government Code Sections 8350, et seq., the successful bidder will be required to execute a Drug-Free Workplace Certification upon execution of the Agreement. The bidder will be required to take positive measures outlined in the certification in order to ensure the presence of a drug-free workplace. Failure to abide with the conditions set forth in the Drug-Free Workplace Act could result in penalties including termination of the Agreement or suspension of payment thereunder.

24. Noncollusion Declaration. In accordance with the provisions of Section 7106 of the Public Contract Code, each bid must be accompanied by a Noncollusion Declaration.

25. Escrow Agreement. Public Contract Code Section 22300 permits the substitution of securities for any monies withheld by a public agency to ensure performance under a contract. At the request and expense of the successful bidder awarded the contract, securities equivalent to the amount withheld as retention shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the successful bidder. The DISTRICT retains the sole discretion to approve the bank selected by the successful bidder to serve as escrow agent. Upon satisfactory completion of the contract, the securities shall be returned to the successful bidder. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The successful bidder shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the successful bidder may request DISTRICT to make payment of earned retentions directly to the escrow agent at the expense of the successful bidder. Also at the successful bidder's expense, the successful bidder may direct investment of the payments into securities, and the successful bidder shall receive interest earned on such investment upon the same conditions as provided for securities deposited by successful bidder. Upon satisfactory completion of the contract, successful bidder shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.

The successful bidder who elects to receive interest on monies withheld in retention by the DISTRICT shall, at the request of any subcontractor performing more than five percent (5%) of the successful bidder's total bid, make that option available to the subcontractor regarding any monies withheld in retention by the successful bidder from the subcontractor. If the successful bidder elects to receive interest on any monies withheld in retention by the DISTRICT, then the subcontractor shall receive the identical rate of interest received by the successful bidder on any retention monies withheld from the subcontractor by the successful bidder, less any actual pro rata costs associated with administering and calculating that interest. In the event that the interest rate is a fluctuating rate, the rate for the subcontractor shall be determined by calculating the interest rate paid during the time that retentions were withheld from the subcontractor. If the successful bidder elects to substitute securities in lieu of retention, then, by mutual consent of the successful bidder and subcontractor, the subcontractor may substitute securities in exchange for the release of monies held in retention by the successful bidder. Public Contract Code Section 22300(d)(1).

The successful bidder wishing to utilize Public Contract Code Section 22300 and enter into an Escrow Agreement shall complete and execute the form Escrow Agreement included in the Project Documents and submit it to the DISTRICT.

26. Change Orders. All change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 59 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 59 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit

and other charges not specifically authorized under Article 59 of the General Conditions will not be allowed.

27. Tobacco-Free Policy. The successful bidder shall agree to enforce a tobacco-free work site.

28. Criminal Records Check. The successful bidder will be required to comply with the applicable requirements of Education Code Section 45125.1 with respect to fingerprinting of employees and must complete the District's Criminal Records Check Certification.

29. Protest. Bidders may protest the recommended award, provided the protest is in writing, contains the bid number, is delivered to the address listed for submission of bid documents, and is submitted within five (5) calendar days of the closing of the bid deadline. Grounds for a protest is that the District failed to follow the selection procedures and adhere to requirements specified in the bid documents or any addenda or amendments; there has been a violation of conflict of interest as provided in California Government Code Section 87100 et. Seq. or violation of any State or Federal law. Protests will not be accepted on any other grounds. All protests will be handled by a panel comprised of District Staff. The District will consider only these specific issues addressed in the written protest. A written response will be directed to the protesting bidder within five (5) calendar days of the receipt of the protest, advising the decision with regard to the protest and the basis for the decision.

30. Labor Compliance Program. The awarded Contractor shall comply with the requirements of the State of California's Standard Specification Code Section 7-1.01A(4) "Labor Nondiscrimination" under this agreement.

31. Each Bidder shall comply with Senate Bill 854 ("SB854") including, but limited to, registration with California Department of Industrial Relations ("DIR"). The DIR's website is <http://www.dir.ca.gov>. Each contractor and subcontractor should carefully review the DIR website for all applicable requirements to be eligible to bid on this project and if needed should consult with an attorney. Copies of the wage rate determinations, entitled Prevailing Wage Scale, are available at the following website: www.dir.ca.gov. It shall be mandatory upon the successful bidder to whom the contract is awarded, and upon any subcontractor listed, to pay not less than the said specified rates to all workers employed by them for this bid.

32. The number of executed copies of the Agreement will be required is **One (1)**.

33. The bidder shall comply with all Federal, State and Local required mechanical inspection and preventive maintenance schedules. The bidder shall keep and maintain all delivery vehicles in good operating and safe and clean condition. The District reserves the right to periodically inspect delivery vehicles while on District property. The District reserves the right to periodically inspect all maintenance records of vehicles used to service the District.

BID FORM

Name of Bidder: _____
To: Irvine Unified School District, acting by and through its Governing Board, herein called the "DISTRICT."

1. The undersigned Bidder, having become familiarized with all the following documents including but not limited to the Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Information Required of Bidder, all prequalification forms pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Declaration, Workers' Compensation Certificate, Agreement, Drug-Free Workplace Certification, Criminal Records Check Certification, Change Order Forms, all insurance requirements, Guarantee forms, Contractor's Certificate Regarding Non-Asbestos Containing Materials, Disabled Veteran Business Enterprises Certification, if applicable, General Conditions and Supplemental Conditions, if any, Special Conditions, if any, specifications, scope of work, and all modifications, addenda and amendments, if any (hereinafter Project Documents), the local conditions affecting the performance of the work and the cost of the work at the place where the work is to be done, hereby proposes and agrees to be bound by all the terms and conditions of the Project Documents and agrees to perform, within the time stipulated, the work, including all of its component parts, and everything required to be performed, and to provide and furnish and pay for any and all of the labor, materials, tools, expendable equipment, and all applicable taxes, utility and transportation services necessary to perform the work and complete in a good workmanlike manner all of the work required in accordance with laws, codes, regulations, ordinances and any other legal requirements governing the work, in connection with the following:

Bid No. 23/24-06MO, Unit Cost Pricing for Roofing

all in strict conformity with the Project Documents, including Addenda Nos. _____, _____, _____, and _____, on file at the office of the DISTRICT for the sum of **(award for Base Bid will be the 'Grand Total Bid Amount' from Appendix A – Specifications – Bid Form B Basis of Award Worksheet)** _____ Dollars (\$ _____).

Each individual bid term shall be determined from visiting the work site, reviewing the drawings and specifications and all portions of the Project Documents, and shall include all items necessary to complete the work, including the assumption of all obligations, duties, and responsibilities necessary to the successful completion of the Project, and the furnishing of all materials and equipment required to be incorporated in and form a permanent part of the work, and the furnishing of tools, equipment, supplies, transportation, facilities, labor, superintendence, and services required to perform and complete the work, all as per the requirements of the Project Documents, whether or not expressly listed or designated.

2. It is understood that the DISTRICT reserves the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process. Bidder agrees that this bid shall remain open and not be withdrawn for the period specified in the Information for Bidders.

3. The initial term of the Agreement is July 1, 2024 through June 30, 2025. Term of the Agreement may be extended upon mutual consent of District and successful bidder(s) and the approval of the DISTRICT's Governing Board, for an additional four (4) one (1) year periods in accordance with provisions contained in the Education Code section 17596 (K-12). The maximum term of the Agreement is five (5) years.

4. The required bid security is attached.

6. It is understood and agreed that if written notice of the award of a contract is mailed, faxed, or delivered to the bidder, the bidder will execute and deliver to the DISTRICT the Agreement and will also furnish and deliver to the DISTRICT the certificates and endorsements of insurance, the Workers' Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor's Certificate Regarding Non-Asbestos Containing Materials, District Rules and Regulations, Guarantee, and the Disabled Veteran Business Enterprises Certification, if applicable, within **five (5)** working days of the notice of award of the contract, or as otherwise requested in writing by the DISTRICT. It is understood that should bidder fail or refuse to return these documents as required by the DISTRICT, the bid security shall be forfeited to the DISTRICT. The bidder further agrees that the work shall be commenced by the bidder, if awarded the contract, as per the date stated on the DISTRICT's Notice to Proceed and shall be completed by the bidder in the time specified by the DISTRICT.

7. Communications conveying notice of award of the contract, requests for additional information or other correspondence should be addressed to the bidder at the address stated below.

8. The name(s) of all persons interested in the bid as principals are as follows:

9. In submitting this bid, the bidder offers and agrees that if the bid is accepted, it will assign to DISTRICT all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Business & Professions Code Section 16700, et seq.) arising from purchases of goods, materials, or services by the bidder for sale to the DISTRICT pursuant to the bid. Such assignment shall be made and become effective at the time the DISTRICT tenders final payment under the contract. (Public Contract Code Section 7103.5; Government Code Section 4450, 4451 and 4552).

10. The undersigned hereby warrants that the bidder has an appropriate license, License No. _____, Class _____, at the time of the bid opening, that such license entitles bidder to provide the work, that such license will be in full force and effect throughout the duration of performance of this Project. Bidder shall be nonresponsive if the Bidder is not licensed as required by the DISTRICT at the time of the bid opening. Any and all subcontractors to be employed by the undersigned shall have appropriate licenses at the time of the bid opening.

11. The bidder hereby certifies that it is, and at all times during the performance of work hereunder shall be, in full compliance with the provisions of the Immigration Reform and

Control Act of 1986 ("IRCA") in the hiring of its employees, and the bidder shall indemnify, hold harmless and defend the DISTRICT against any and all actions, proceedings, penalties or claims arising out of the bidder's failure to comply strictly with the IRCA.

12. It is understood and agreed that if requested by the DISTRICT, the bidder shall furnish a notarized financial statement, references, and other information required by the DISTRICT sufficiently comprehensive to permit an appraisal of bidder's ability to perform the Project.

13. The undersigned hereby warrants that all work shall be completed within the specified time from the date specified in the Notice to Proceed issued by the District. Time is of the essence. The undersigned agrees that failure to complete the work within the time set forth herein will result in the imposition of liquidated damages for each consecutive calendar day of delay in the amount of Five Hundred Dollars (\$500.00). (Government Code Section 53069.85)

14. The required noncollusion declaration properly notarized is attached as required by Public Contract Code Section 7106. Bidder understands and agrees that failure to submit a completed and signed affidavit will render the bidder automatically nonresponsive.

15. It is understood and agreed that all change order requests must be submitted in the form set forth in the Project Documents and pursuant to Article 59 of the General Conditions. The amount of allowable charges submitted pursuant to a change order shall be limited to the charges allowed under Article 59 of the General Conditions. Indirect, consequential and incidental costs, project management costs, extended home office and field office overhead, administrative costs and profit and other charges not specifically authorized under Article 59 of the General Conditions will not be allowed.

16. The Information Required of Bidder form has been fully completed and is attached hereto.

The undersigned hereby declares that all of the representations of this bid are made under penalty of perjury under the laws of the State of California.

Individual Name: _____
Signed by: _____
Print Name: _____
Date: _____
Business Address: _____

Telephone: _____

Partnership Name: _____
Signed by: _____
Print Name: _____
Date: _____
Business Address: _____

Telephone: _____
Other Partner(s): _____

Corporation Name: _____
(a _____ Corporation¹)
Business Address: _____

Telephone: _____
Signed by: _____, President, Date: _____
Print Name: _____, President
Signed by: _____, Secretary, Date: _____
Print Name: _____, Secretary
[Seal]

¹ A corporation awarded the contract shall furnish evidence of its corporate existence and evidence that the officer signing the Agreement and bonds is duly authorized to do so.

Joint Venturer

Name: _____

Signed by: _____, Joint Venturer

Print Name: _____

Date: _____

Business Address: _____

Telephone: _____

Other Parties to
Joint Venture:

If an individual: _____
(Name)

Signed by: _____

Print Name: _____

Date: _____

Doing Business as: _____;

Business Address: _____

Telephone: _____

If a Partnership: _____
(Name)

Signed by: _____, Partner

Print Name: _____

Date: _____

Business Address: _____

Telephone: _____

If a Corporation: _____
(a _____ Corporation)

Signed By: _____ Date: _____

Print Name: _____

Title: _____

Date: _____

Business Address: _____

Telephone: _____

Bid Bond No.: _____

BID BOND

KNOW ALL PERSONS BY THESE PRESENT, that we _____, as Principal, and _____ as Surety, a California admitted surety insurer, are held and firmly bound unto the Irvine Unified School DISTRICT, hereinafter called the DISTRICT, in the sum of **TEN PERCENT (10%) OF THE 'GRAND TOTAL BID AMOUNT'** FROM PAGE 1 OF THE BID FORM 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 jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of this obligation is such that whereas the Principal has submitted the accompanying bid _____, 20__, for:

Bid No. 23/24-06MO, Unit Cost Pricing for Roofing.

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the opening of the same, or, if no period be specified, within sixty (60) days after said opening; and if the Principal is awarded the contract, and shall within the period specified therefore, or, if no period be specified, within **five (5)** working days after the notice of award of the contract, or as otherwise requested in writing by the DISTRICT, enter into a written contract with the DISTRICT, in accordance with the bid as accepted and give bonds with good and sufficient surety or sureties, as may be required for the faithful performance and proper fulfillment of such contract and for the payment for labor and materials used for the performance of the contract, furnish certificates and endorsements evidencing the required insurance is in effect and furnish and deliver to the DISTRICT the Workers' Compensation Certificate, Drug-Free Work Place Certification, the Criminal Records Check Certification, Contractor's Certificate Regarding Non-Asbestos Containing Materials, and the Disabled Veteran Business Enterprises Certification, if applicable, then the above obligation shall be void and of no effect, otherwise the bond amount shall be forfeited to the DISTRICT.

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

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

IN WITNESS HEREOF, the parties have executed this bond under their several seals this day of ____, 20__, the name and corporate seal of each corporate party being hereto affixed and duly signed by its undersigned authorized representative.

(Corporate Seal of
Principal, if
Corporation)

Principal (Proper Name of Bidder)

By: _____
Signature

Print Name

Title

(Corporate Seal
of Surety)

Surety

(Attach Attorney-in-Fact Certificate
and Required Acknowledgements)

By: _____
Signature

Print Name

Title

Address

Telephone No.

Facsimile No.

INFORMATION REQUIRED OF BIDDER

The Bidder shall furnish all the following information. Bidder shall carefully read and answer all questions to ensure completeness and accuracy. Failure to comply with this requirement may cause rejection of the bid. Additional sheets may be attached if necessary. "You" or "your" as used herein refers to the bidder and any of its owners, officers, directors, shareholders, principals, responsible managing officer (RMO) or responsible managing employee (RME). DISTRICT has discretion to request additional information depending on the Project.

(1) Bidder name and address (Post Office Box Number not sufficient):

(2) Telephone: _____ Fax No.: _____
Electronic Mail: _____

(3) Individual _____ Partnership _____ Corporation _____ Joint Venture _____ (check one)

(4) Bidder's License No. _____ Class: _____
License Expiration Date _____
Name of License holder _____

(5) Have you ever been licensed under a different name or different license number?
Yes ___ No ___ If "Yes," give name and license number.

_____.

(6) Names and titles of all your owners, officers, principals, responsible managing officers and responsible managing employees:

Name	Title
_____	_____
_____	_____
_____	_____

(7) Number of years as a contractor in this type of construction work: _____

(8) Person who inspected work site:

Name and Title: _____

Date of Inspection: _____

(9) How many years experience have you had in school construction work?

(a) as a general contractor? _____

(b) as a subcontractor? _____

(10) How many years experience have you had in public construction work?

(a) as a general contractor? _____

(b) as a subcontractor? _____

(11) Have you ever been terminated from a school or any public construction project prior to the completion of the project? Yes ___ No ___ If the answer is "Yes," give dates, names and addresses of school/public agency and details. _____

(12) Have you ever been barred from bidding on any school or public construction project? Yes ___ No ___ If the answer is "Yes," give dates, names and addresses of school/public agency and details. _____

(13) Have you ever defaulted on any school or public construction project that resulted in a claim to a surety? Yes ___ No ___ If the answer is "Yes," give dates, names and addresses of school/public agency and details. _____

(14) Have you been assessed damages (i.e., liquidated damages) for any public construction project in the past ten (10) years? Yes ___ No ___ If the answer is “Yes,” give dates, names, and addresses of public agency and details. _____

(15) Have you ever brought any claim(s) against a public agency? Yes ___ No ___ If the answer is “Yes,” please explain in detail name of public agency, nature of the claim and outcome. _____

(16) Have you ever failed to complete a school or public construction project in the last ten (10) years? Yes ___ No ___ If the answer is “Yes,” provide name of public agency and details. _____

(17) Have you been in litigation or arbitration or dispute of any kind on a question or questions relating to a public construction project during the past ten (10) years? Yes ___ No ___ If the answer is “Yes,” provide name of public agency and details. _____

(18) List the names, addresses and telephone numbers of three Architects or Engineers whose jobs you have worked on in the past five (5) years.

<u>Name</u>	<u>Address</u>	<u>Telephone</u>
_____	_____	() _____
_____	_____	() _____
_____	_____	() _____

(19) Do you now or have you ever had any direct or indirect business, financial or other connection with any officer, employee or consultant of the DISTRICT or Architect?
Yes ___ No ___ If so, please elaborate.

(20) List at least five (5) of your most recent school construction projects.

(1) _____
(2) _____
(3) _____
(4) _____
(5) _____

(21) Are you currently under contract for another project? Yes ___ No ___ If the answer is “Yes,” please provide the following information:

(a) Project Number 1:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(b) Project Number 2:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(c) Project Number 3:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(d) Project Number 4:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(e) Project Number 5:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(22) Are there projects not listed above that will be undertaken during the duration of DISTRICT's Project? Yes _____ No _____ If the answer is "Yes," please provide the following information:

(a) Project Number 1:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(b) Project Number 2:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(c) Project Number 3:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(d) Project Number 4:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(e) Project Number 5:

Name of Project: _____

Detailed Description: _____

Name of Project Owner: _____

Contract Amount: _____

Completion Date: _____

(23) Additional information required: _____

(24) List of References - Public construction projects of similar nature in a school/community college/university within the last five (5) years. DISTRICT has discretion to require more than five (5) references.

1. Name: _____
Address and Telephone: _____

Contact Person: _____
Description of Project: _____
Dates of commencement and completion of Project: _____

Contract Amount: _____
Architect: _____
Architect's Address and Telephone: _____

DSA or public agency inspector: _____
Address and Telephone: _____

2. Name: _____
Address and Telephone: _____

Contact Person: _____
Description of Project: _____
Dates of commencement and completion of Project: _____

Contract Amount: _____
Architect: _____
Architect's Address and Telephone: _____

DSA or public agency inspector: _____

Address and Telephone: _____

3. Name: _____

Address and Telephone: _____

Contact Person: _____

Description of Project: _____

Dates of commencement and completion of Project: _____

Contract Amount: _____

Architect: _____

Architect's Address and Telephone: _____

DSA or public agency inspector: _____

Address and Telephone: _____

4. Name: _____

Address and Telephone: _____

Contact Person: _____

Description of Project: _____

Dates of commencement and completion of Project: _____

Contract Amount: _____

Architect: _____

Architect's Address and Telephone: _____

DSA or public agency inspector: _____

Address and Telephone: _____

5. Name: _____
Address and Telephone: _____

Contact Person: _____
Description of Project: _____
Dates of commencement and completion of Project: _____

Contract Amount: _____
Architect: _____
Architect's Address and Telephone: _____

DSA or public agency inspector: _____
Address and Telephone: _____

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing responses to the Information Required of Bidder are true and correct.

Signature

Print Name

Title

Date

Note: DISTRICT may wish to expand the scope of the “Information Required of Bidder” form and include additional questions.

DESIGNATION OF SUBCONTRACTORS

In compliance with the Subletting and Subcontracting Fair Practices Act (Public Contract Code Section 4100 et. seq.) and any amendments thereof, each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render service to the bidder (prime contractor) in or about the construction of the work or improvement to be performed under this contract or a subcontractor licensed by the State of California who, under subcontract to the bidder (prime contractor), specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications in an amount in excess of one-half of one percent of the bidder's (prime contractor's) total bid and (b) the portion of the work which will be done by each subcontractor. The bidder (prime contractor) shall list only one subcontractor for each such portion as is defined by the bidder (prime contractor) in this bid.

If a bidder (prime contractor) fails to specify a subcontractor or if a bidder (prime contractor) specifies more than one subcontractor for the same portion of work to be performed under the contract in excess of one-half of one percent of the bidder's (prime contractor's) total bid, bidder shall be deemed to have agreed that bidder is fully qualified to perform that portion, and that bidder alone shall perform that portion. Violation of this requirement (including the procurement of a subcontractor for the Project if no subcontractor is specified) can result in the DISTRICT invoking the remedies of Public Contract Code Sections 4110 and 4111.

No bidder (prime contractor) whose bid is accepted shall (a) substitute any subcontractor, (b) permit any subcontractor to be voluntarily assigned or transferred or allow it to be performed by any one other than the original subcontractor listed in the original bid, or (c) sublet or subcontract any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which the original bid did not designate a subcontractor, except as authorized in the Subletting and Subcontracting Fair Practices Act. Subletting or subcontracting of any portion of the work in excess of one-half of one percent of the bidder's (prime contractor's) total bid as to which no subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, only after a finding reduced to writing as a public record of the DISTRICT awarding this contract setting forth the facts constituting the emergency or necessity.

Type of trade, labor, or service	Name & License No. of Subcontractor License Expiration Date (Indicate if a Disabled Veteran Business Enterprise)	Complete Address (Name of City Not Sufficient) and Telephone No.	DIR Registration No.

Bidder agrees that within twenty-four (24) hours of the bid opening, Bidder shall provide the DISTRICT with the license number (if applicable), expiration date of license, complete address and telephone numbers of each listed subcontractor if such information is not available at the time of the bid opening.

Dated: _____

Name of Bidder

By: _____
(Signature of Bidder)

Print Name: _____

Address: _____

Telephone: _____

NONCOLLUSION DECLARATION TO BE EXECUTED BY
BIDDER AND SUBMITTED WITH BID
(Public Contract Cod Section 7106)

The undersigned declares:

I am the _____ [Title] of _____ [Name of Company], the party making the foregoing bid.

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

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

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

Signature

Print Name

SAMPLE AGREEMENT

THIS AGREEMENT, dated the ___ day of _____, 2024, in the County of Orange, State of California, is by and between **Irvine Unified School District**, (hereinafter referred to as "DISTRICT"), and _____, (hereinafter referred to as "CONTRACTOR").

The DISTRICT and the CONTRACTOR, for the consideration stated herein, agree as follows:

1. CONTRACTOR agrees to complete the Project known as **Bid No. 23/24-06MO, Unit Cost Pricing for Roofing** from _____ through _____ according to all the terms and conditions set forth in the Project Documents, including but not limited to the Notice Calling For Bids, Information for Bidders, Bid Form, Bid Security, Bid Bond, Designation of Subcontractors, Information Required of Bidder, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Declaration, Payment Bond, Faithful Performance Bond, Tobacco Use Policy, Workers' Compensation Certificate, Drug-Free Workplace Certification, Contractor's Certificate Regarding Non-Asbestos Containing Materials, Criminal Records Check Certification, District Rules and Regulations, Guarantee, Escrow Agreement, if applicable, Extract of Public Works Contract Award, Disabled Veteran Business Enterprises Certification, if applicable, Change Orders, Shop Drawing Transmittals, Insurance Certificates and Endorsements, W9, General Conditions, Scope of Work, Specifications, Drawings, if any, Supplemental Conditions, if any, Special Conditions, if any, and any and all modifications, addenda and amendments thereto by this reference incorporated herein. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.

2. CONTRACTOR shall perform within the time set forth in Paragraph 4 of this Agreement everything required to be performed, and shall provide, furnish and pay for all the labor, materials, necessary tools, expendable equipment, and all taxes, utility and transportation services required for construction of the Project. All of said work shall be performed and completed in a good workmanlike manner in strict accordance with the drawings, specifications and all provisions of this Agreement as hereinabove defined and in accordance with applicable laws, codes, regulations, ordinances and any other legal requirements governing the Project. The CONTRACTOR shall be liable to the DISTRICT for any damages arising as a result of a failure to fully comply with this obligation, and the CONTRACTOR shall not be excused with respect to any failure to so comply by any act or omission of the Architect, Engineer, Inspector, Division of State Architect, or representative of any of them, unless such act or omission actually prevents the CONTRACTOR from fully complying with the requirements of the Project Documents, and unless the CONTRACTOR protests at the time of such alleged prevention that the act or omission is preventing the CONTRACTOR from fully complying with the Project Documents. Such protest shall not be effective unless reduced to writing and filed with the DISTRICT within three (3) working days of the date of occurrence of the act or omission preventing the CONTRACTOR from fully complying with the Project Documents.

3. DISTRICT shall pay to the CONTRACTOR, as full consideration for the faithful performance of this Agreement, subject to any additions or deductions as provided in the Project Documents, the sum NOT TO EXCEED, purchase orders to be processed as work is scheduled throughout the year with each requiring bonding and insurance per the contract.

4. The initial term of the Agreement is July 1, 2024 through June 30, 2025. Term of the Agreement may be extended upon mutual consent of District and successful bidder(s) and the approval of the DISTRICT's Governing Board, for an additional four (4) one (1) year periods in accordance with provisions contained in the Education Code section 17596 (K-12). The maximum term of the Agreement is five (5) years.

5. The work shall be commenced as specified. The DISTRICT reserves the right in its sole discretion to utilize other roofing contractors for work required by the DISTRICT.

6. **Time is of the essence.** If the work is not completed in accordance with Paragraph 4 above, it is understood that the DISTRICT will suffer damage. It being impractical and infeasible to determine the amount of actual damage, in accordance with Government Code Section 53069.85, it is agreed that CONTRACTOR shall pay to DISTRICT as fixed and liquidated damages, and not as a penalty, the sum of **Five hundred Dollars (\$ 500.00)** for each calendar day of delay until work is completed and accepted. Time extensions may be granted by the DISTRICT as provided in Article 63 of the General Conditions. Liquidated damages shall be imposed as set forth in Article 63 of the General Conditions.

7. Termination for Cause or Nonappropriation. In the event CONTRACTOR defaults in the performance of the Agreement as set forth in General Conditions Article 13(a) or if there is a nonappropriation of funds or insufficient funds as set forth in General Conditions Article 13(d), then this Agreement shall terminate or be suspended as set forth in General Conditions Article 13.

Termination for Convenience. DISTRICT has discretion to terminate this Agreement at any time and require CONTRACTOR to cease all work on the Project by providing CONTRACTOR written notice of termination specifying the desired date of termination. Upon receipt of written notice from DISTRICT of such termination for DISTRICT's convenience, CONTRACTOR shall:

- (i) Cease operations as directed by DISTRICT in the notice;
- (ii) Take any actions necessary, or that DISTRICT may direct, for the protection and preservation of the work; and
- (iii) Not terminate any insurance provisions required by the Project Documents.

In case of such termination for DISTRICT's convenience, CONTRACTOR shall be entitled to receive payment from DISTRICT for work satisfactorily executed and for proven loss with respect to materials, equipment, and tools, including overhead and profit for that portion of

the work completed. In the case of Termination for Convenience, DISTRICT shall have the right to accept assignment of subcontractors. The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to the DISTRICT.

8. Hold Harmless and Indemnification. To the fullest extent permitted by law, the CONTRACTOR, at the CONTRACTOR's sole cost and expense, agrees to fully defend, indemnify and hold harmless, the DISTRICT, including but not limited to any of its governing board members, officers, employees and agents, from and against any and all claims, actions, demands, costs, judgments, liens, penalties, liabilities, damages, losses, anticipated losses of revenues, and expenses, including any fees of accountants, attorneys or other professionals, arising out of, in connection with, resulting from or related to, or claimed to be arising out of, in connection with, resulting from or related to any act or omission by the CONTRACTOR or any of its officers, agents, employees, subcontractors, sub-subcontractors, any person performing any of the work pursuant to a direct or indirect contract with the CONTRACTOR or individual entities comprising the CONTRACTOR, in connection with or relating to, or claimed to be in connection with or relating to the work, this Agreement, or the Project, including but not limited to any costs or liabilities arising out of or in connection with:

- (a) failure to comply with any applicable law, statute, code, ordinance, regulation, permit or orders;
- (b) any misrepresentation, misstatement or omission with respect to any statement made in the Project Documents or any document furnished by the CONTRACTOR in connection therewith;
- (c) any breach of duty, obligation or requirement under the Project Documents;
- (d) any failure to coordinate the work of other contractors;
- (e) any failure to provide notice to any party as required under the Project Documents;
- (f) any failure to act in such a manner as to protect the DISTRICT and the Project from loss, cost, expense or liability; or
- (g) any failure to protect the property of any utility company or property owner.

This indemnity shall survive termination of the contract or final payment thereunder. This indemnity is in addition to any other rights or remedies which the DISTRICT may have under the law or under the Project Documents. In the event of any claim or demand made against any party which is entitled to be indemnified hereunder, the DISTRICT may in its sole discretion reserve, retain or apply any monies due to the CONTRACTOR under the Project Documents for the purpose of resolving such claims; provided, however, that the DISTRICT may release such funds if the CONTRACTOR provides the DISTRICT with reasonable assurance of protection of the DISTRICT's interests. The DISTRICT shall in its sole discretion determine whether such assurances are reasonable.

9. CONTRACTOR shall take out, prior to commencing the work, and maintain, during the life of this Agreement, and shall require all subcontractors, if any, whether primary or secondary, to take out and maintain the insurance coverages set forth below and in Articles 16, 17,

18 and 19 of the General Conditions. CONTRACTOR agrees to provide all evidences of coverage required by DISTRICT including certificates of insurance and endorsements.

a. CONTRACTOR shall, at CONTRACTOR's sole cost and expense, maintain in full force and effect the following insurance coverages from a California licensed insurer with an A, VIII, or better rating from A.M. Best or an approved self-insurance program, sufficient to cover any claims, damages, liabilities, costs and expenses (including attorney fees) arising out of or in connection with CONTRACTOR's fulfillment of the obligations under this AGREEMENT:

(i) Comprehensive General Liability Insurance, including bodily injury, property damage and contractual liability with minimum limits set by the DISTRICT. The policy may not contain an exclusion for sexual molestation or abuse coverage, may be waived by the DISTRICT.

(1) General Aggregate	\$2,000,000
(2) Each Occurrence	\$1,000,000
(3) Products/Completed Operations	\$1,000,000
(4) Personal and Advertising Injury	\$1,000,000
(5) Damage to Rented Premises	\$50,000
(6) Medical Expense (any one person)	\$5,000

(ii) Umbrella (excess) liability insurance coverage with a limit of \$3,000,000, unless waived by the DISTRICT. The policy may not contain an exclusion for sexual molestation or abuse coverage, may be waived by the DISTRICT.

(iii) Business Automobile Liability Insurance for owned, scheduled, non-owned, or hired automobiles with a combined single limit not less than \$1,000,000 per occurrence. (Required only if the CONTRACTOR drives on behalf of the DISTRICT in the course of performing Services.)

(iv) Professional Liability Insurance with a limit of \$1,000,000 per occurrence, unless waived by the DISTRICT and if applicable.

(v) Workers' Compensation and Employers Liability Insurance in a form and amount covering CONTRACTOR's full liability under the California Workers' Compensation Insurance and Safety Act and in accordance with applicable state and federal laws. The policy shall be endorsed with the insurer's waiver of rights of subrogation against the DISTRICT.

It should be expressly understood, however, that the coverage and limits referred to under a., b., c., and d. above shall not in any way limit the liability of the CONTRACTOR.

b. No later than five (5) days from execution of this AGREEMENT by the DISTRICT and CONTRACTOR, and prior to commencing the Services under this

AGREEMENT, CONTRACTOR shall provide DISTRICT with certificates of insurance evidencing all coverages and endorsements required hereunder.

CONTRACTOR shall provide prior written notice to the DISTRICT thirty (30) days in advance of any non-renewal, cancellation, or modification of the required insurance. The certificates of insurance providing the coverages referred to in clauses (i) and (ii) above shall name DISTRICT, its Governing Board, officers, and employees, as additional insureds with appropriate endorsements. In addition, the certificates of insurance shall include a provision stating "Such insurance as is afforded by this policy shall be primary, and any insurance carried by DISTRICT shall be excess and noncontributory." Failure to maintain the above mentioned insurance coverages shall be cause for termination of this AGREEMENT

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

Automotive and truck where operated in amounts as above

Material hoist where used in amounts as above

10. Public Contract Code Section 22300 permits the substitution of securities for any retention monies withheld by the DISTRICT to ensure performance under this Agreement. At the request and expense of the CONTRACTOR, securities equivalent to the monies withheld shall be deposited with the DISTRICT, or with a state or federally chartered bank in California as the escrow agent, who shall then pay such monies to the CONTRACTOR. The DISTRICT retains the sole discretion to approve the bank selected by the CONTRACTOR to serve as escrow agent. Upon satisfactory completion of the Agreement, the securities shall be returned to the CONTRACTOR. Securities eligible for investment shall include those listed in Government Code Section 16430 or bank or savings and loan certificates of deposit. The CONTRACTOR shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

In the alternative, under Section 22300, the CONTRACTOR may request DISTRICT to make payment of earned retention monies directly to the escrow agent at the expense of the CONTRACTOR. Also at the CONTRACTOR's expense, the CONTRACTOR may direct investment of the payments into securities, and the CONTRACTOR shall receive interest earned on such investment upon the same conditions as provided for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by escrow agent from DISTRICT pursuant to the terms of Section 22300.

11. If CONTRACTOR is a corporation, the undersigned hereby represents and warrants that the corporation is duly incorporated and in good standing in the State of California, and that _____, whose title is _____, is authorized to act for and bind the corporation.

12. Each and every provision of law and clause required by law to be inserted in this Agreement shall be deemed to be inserted herein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not currently inserted, then upon application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

13. This Agreement constitutes the entire agreement of the parties. No other agreements, oral or written, pertaining to the work to be performed, exists between the parties. This Agreement can be modified only by an amendment in writing, signed by both parties and pursuant to action of the Governing Board of the District. This Agreement shall be governed by the laws of the State of California.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed.

IRVINE UNIFIED SCHOOL DISTRICT

CONTRACTOR

By: _____
Signature

By: _____
Signature

Print Name

Print Name

Title

Title

Date

Date

Irvine Unified School District
Board Approval Date

Contractor's License No.

Tax ID No.
(Corporate Seal of Contractor,
if corporation)

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENT:

WHEREAS, the Irvine Unified School District of Orange County, California ("hereinafter referred to as DISTRICT"), has awarded to _____ (hereinafter referred to as the "Contractor/Principal") a contract for the work described as **Bid No. 23/24-06MO, Unit Cost Pricing for Roofing**;

WHEREAS, said Contractor/Principal is required by Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code to furnish a bond in connection with said contract;

NOW, THEREFORE, we, the Contractor/Principal and _____, as Surety, a California admitted surety insurer, are held firmly bound unto the DISTRICT for one hundred percent (100%) of the total amount payable by the DISTRICT under the terms of the contract awarded by the DISTRICT to the Contractor/Principal lawful money of the United States of America for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Contractor/Principal, his/her or its heirs, executors, administrators, successors, or assigns, or a subcontractor, shall fail to pay any person or persons named in Civil Code Section 3181 or fail to pay for any materials, or other supplies, used in, upon, for, or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or for amounts due under the Unemployment Insurance Code, with respect to work or labor thereon of any kind, or shall fail to deduct, withhold, and pay over to the Employment Development Department, any amounts required to be deducted, withheld, and paid over by Section 13020 of the Unemployment Insurance Code with respect to work and labor thereon of any kind, then said Surety will pay for the same, in or to an amount not exceeding the amount hereinabove set forth, and also will pay in case suit is brought upon this bond, such reasonable attorney's fees as shall be fixed by the court, awarded and taxed as provided in Division 3, Part IV, Title XV, Chapter 7 (commencing at Section 3247) of the California Civil Code.

This bond shall inure to the benefit of any of the persons named in Section 3181 of the California Civil Code, so as to give a right of action to such person or their assigns in any suit brought upon this bond.

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

attempted rescission of the contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the DISTRICT and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 3110 and 3112 of the California Civil Code, and has not been paid the full amount of his/her or its claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

Any claims under this bond may be addressed to:

_____ (Name and address of Surety)

_____ (Name and address of agent or
representative in California,
if different from above)

_____ (Telephone and facsimile number of
Surety or agent or representative
in California)

IN WITNESS HEREOF, we have here to set our hands and seals on this ____ day of _____, 20__.

CORPORATE SEAL, IF APPLICABLE, AND NOTARIAL ACKNOWLEDGEMENT OF CONTRACTOR

Contractor/Principal

By:

Signature

Print Name and Title

SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY

Surety

By:

Signature

Print Name and Title

(Mailing Address, Telephone and Facsimile No. of Surety)

(Attach Attorney-in-Fact Certificate and Required Acknowledgement)

FAITHFUL PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENT:

WHEREAS, the Irvine Unified School District of Orange County, California (hereinafter referred to as "DISTRICT"), awarded to _____, (hereinafter referred to as the "Contractor/Principal") the contract for the work described as **Bid No. 23/24-06MO, Unit Cost Pricing for Roofing**;

WHEREAS, said Contractor/Principal is required under the terms of said contract to furnish a bond for the faithful performance of said contract which contract is incorporated herein by reference;

NOW, THEREFORE, we the undersigned Contractor, as Principal, and Surety, a California admitted surety insurer are held and firmly bound to the DISTRICT for one hundred percent (100%) of the total amount payable by the DISTRICT under the terms of the contract awarded by the DISTRICT to the Contractor/Principal, lawful money of the United States of America, for payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, if the hereby bonded Contractor/Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions, and agreements in the said contract which is attached hereto and incorporated herein by reference and any alteration and/or amendments thereof, made as therein provided, including, but not limited to, the provisions regarding contract duration and liquidated damages, all within the time and in the manner therein designated in all respects according to their true intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force and effect.

As a condition precedent to the satisfactory completion of the contract, the above obligation shall hold good for a period of **One (1)** years after the acceptance of the work by DISTRICT, during which time if Contractor/Principal shall fail to make full, complete, and satisfactory repair and replacements and totally protect the DISTRICT from loss or damage made evident during the period of **One (1)** years from the date of completion of the work, and resulting from or caused by defective materials or faulty workmanship, the above obligation in penal sum thereof shall remain in full force and effect. The obligation of Surety hereunder shall continue so long as any obligation of Contractor remains.

Whenever Contractor/Principal shall be, and is declared by the DISTRICT to be, in default under the contract, the DISTRICT having performed the DISTRICT's obligations thereunder, the Surety shall promptly remedy the default, or shall promptly:

1. Complete the contract in accordance with its terms and conditions; or

2. Obtain a bid or bids for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a contract between such bidder and the DISTRICT, and make available as work progresses sufficient funds to pay the cost of completion less the balance of the contract price, but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth above. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor/Principal by the DISTRICT under the contract and any modifications thereto, less the amount previously properly paid by the DISTRICT to the Contractor/Principal.

Surety expressly agrees that the DISTRICT may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Principal. Surety shall not utilize Contractor/Principal in completing the contract nor shall Surety accept a bid from Contractor/Principal for completion of the work if the DISTRICT, when declaring the Contractor/Principal in default, notifies Surety of the DISTRICT's objection to Contractor's/Principal's further participation in the completion of the work.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the DISTRICT named herein or the successors or assigns of the DISTRICT. Any suit under this bond must be instituted within the applicable statute of limitations period.

FURTHER, the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or modification of the Project documents, or of the work to be performed thereunder, shall in any way affect its obligations on this bond; and it does hereby waive notice of any change, extension of time, alteration or modification of the Project documents or of work to be performed thereunder.

Contractor/Principal and Surety agree that if the DISTRICT is required to engage the services of an attorney in connection with the enforcement of this bond, each shall pay DISTRICT's reasonable attorney's fees and costs incurred, with or without suit, in addition to the above amount.

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

CORPORATE SEAL, IF APPLICABLE, AND NOTARIAL ACKNOWLEDGEMENT OF CONTRACTOR

Contractor/Principal

By: _____
Signature

Print Name and Title

SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY

Surety

By: _____
Signature

(Mailing Address, Telephone No. and Facsimile No. of Surety)

Print Name and Title

(Attach Attorney-in-Fact Certificate and Required Acknowledgement)

WORKERS' COMPENSATION CERTIFICATE

Labor Code Section 3700.

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

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

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

(c) For any county, city, city and county, municipal corporation, public district, public agency or any political subdivision of the state, including each member of a pooling arrangement under a joint exercise of powers agreement (but not the state itself), by securing from the Director of Industrial Relations a certificate of consent to self-insure against workers' compensation claims, which certificate may be given upon furnishing proof satisfactory to the director of ability to administer workers' compensation claims properly, and to pay workers' compensation claims that may become due to its employees. On or before March 31, 1979, a political subdivision of the state which, on December 31, 1978, was uninsured for its liability to pay compensation, shall file a properly completed and executed application for a certificate of consent to self-insure against workers' compensation claims. The certificate shall be issued and be subject to the provisions of Section 3702."

I am aware of the provisions of Labor Code Section 3700 which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.

Name of the Contractor

By: _____
Signature

Print Name

Title

Date

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

DRUG-FREE WORKPLACE CERTIFICATION

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

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

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

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

I also understand that if the DISTRICT determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355,

that the contract awarded herein is subject to suspension of payments, termination, or both. I further understand that, should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350, et seq.

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

NAME OF CONTRACTOR

Signature

Print Name

Title

Date

**CONTRACTOR'S CERTIFICATE REGARDING
NON-ASBESTOS CONTAINING MATERIALS**

Per Article 69 of the General Conditions.

Certification for _____ from _____ through _____. We hereby certify that no Asbestos, or Asbestos Containing Materials shall be used in this Project or in any tools, devices, clothing, or equipment used to affect the _____ which we have installed in the Irvine Unified School District.

- (a) The Contractor further certifies that he/she has instructed his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.
- (b) Asbestos and/or asbestos containing material shall be defined as all items containing but not limited to chrysotile, corcidolite, amosite, anthophyllite, tremolite and actinolite.
- (c) Any or all material containing greater than one-tenth of one percent (.1%) asbestos shall be defined as asbestos containing material.
- (d) Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy. The costs of any such tests shall be paid by the Contractor if the material is found to contain asbestos.
- (e) All work or materials found to contain asbestos or work or material installed with asbestos containing equipment will be immediately rejected and this work will be removed at no additional cost to the District.

Date

Name of Contractor

By: _____
Signature

Print Name

Title

TOBACCO USE POLICY

IRVINE UNIFIED SCHOOL DISTRICT
Irvine, California

In the interest of public health, the Irvine Unified School District provides a tobacco-free environment. Smoking or the use of any tobacco products are prohibited in buildings and vehicles, and on any property owned, leased or contracted for, by the District. Failure to abide with this requirement could result in the termination of this contract.

I acknowledge that I am aware of Tobacco Use Policy and hereby certify that I and my employees will adhere to the requirements of the policy.

Name of Bidder

Signature

Date

NOTICE TO CONTRACTORS REGARDING CRIMINAL RECORDS CHECK
(EDUCATION CODE SECTION 45125.1)

Education Code Section 45125.1 provides that anyone who has a contract with a local education agency (school district) shall ensure that any employee who interacts with students outside of the immediate supervision and control of the student's parent or guardian or a District/school employee has a valid criminal records summary resulting from submission of the employee's fingerprints in a manner authorized by the Department of Justice (DOJ).

The DOJ shall ascertain whether the individual whose fingerprints were submitted to it has been arrested or convicted of any crime insofar as that fact can be ascertained from information available to the DOJ.

The entity shall not permit an employee to come in contact with any student until the DOJ has ascertained that the employee has not been convicted of a violent felony as defined in Penal Code section 667.5(c) or serious felony as defined in Penal Code section 1192.7(c). The entity shall certify in writing to the governing board of the school district that none of its employees who may come in contact with any student have been convicted of a violent or serious felony.

CRIMINAL RECORDS CHECK
CERTIFICATION BY CONTRACTOR

To the Governing Board of Irvine Unified School District:

I, _____, am the _____, of _____
Name of Individual Title Name of Contractor
and I am authorized to execute this Certification on behalf of the Contractor.

1. I have carefully read and understand the Notice to Contractors Regarding a Valid Criminal Record Summary required under Education Code Section 45125.1.
2. Due to the nature of the services that will be provided to the District, Contractor's employees will or may have contact with students of the District outside of the immediate supervision and control of the student's parent or guardian or District employee.
3. I have obtained and reviewed the valid Criminal Records Summary of my employees who will be performing services for the District. If any subsequent/future employees will be performing services for the District, I will obtain and review the Valid Criminal Records Summary of these employees and submit an updated Certification to the District.
4. None of the employees who will be performing the services to the District have been convicted of a violent felony as defined in Penal Code section 667.5(c) or serious felony as defined in Penal Code Section 1192.7(c), and this determination was made by a fingerprint check through the Department of Justice.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct.

Executed at _____, California on _____.
Date

Signature

Typed or Printed Name

Title

Name of Contractor

DISTRICT RULES AND REGULATIONS

MAINTENANCE & OPERATIONS

100 Nightmist, Irvine, CA 92618

(949) 936-5300 fax (949) 936-5309

The following rules and regulations must be followed by every contractor doing business with Irvine Unified School District. Failure to comply may result in the removal of you and/or members of your crew from the job, and possible back charges for our direct costs.

1. This a tobacco, drug and alcohol free school district; **no tobacco products, drug products or vaping** may be used on District property.
2. The District reserves the right in its sole discretion to utilize other contractors for work required by the District.
3. All of the City of Irvine's laws relating to hours and noise of construction work must be followed. If you want to work other than, 7:00 am - 6:00pm or dusk (whichever is earlier) Monday through Friday, or 9:00am - 5:00pm Saturday, you must get a waiver from the City.
4. No pets are allowed on district property.
5. Anyone not directly involved in the scope of work shall not be on the job site.
6. No music, i.e. radios, cassettes, CD's, or headphones, etc.
7. No district equipment shall be used by any contractor unless specifically allowed in writing prior to the start of work. (phone, vacuum, ladders, trash cans or bins, microwave, etc.)
8. Any contractor working on a site where students are present must supply the District with certification that all employees on the project have been finger printed and approved per state law.
9. Fraternalization or other contact with students is strictly forbidden.
10. The contractor shall, prior to the start of work, provide the District with the required Certificate of Insurance documents.
11. The contractor must clean up all debris from the course of work daily. This includes sweeping, vacuuming, hosing down and other appropriate measures. Any and all damage to the district's property caused by the contractor's equipment or materials shall be repaired to the district's satisfaction.
12. All employees and subcontractors shall act in a professional manner and wear a shirt or uniform with the company name and logo plainly visible. All other clothing shall be free from holes and any inappropriate logos or patches.

13. Any contractor that loses site keys may be billed for the full cost of rekeying the site.
14. The contractor will only make changes at the request of the District's Facilities/ Construction or Maintenance Departments Director, Supervisor, Foreman, or Inspector.
15. The contractor is responsible for locating any and all utilities and other appurtenances that may be affected by this project. Any and all damage is the contractor's responsibility to repair to the District's satisfaction. The District will make available any as-built documents in its possession to the contractor for review at his request. The District does not guarantee the accuracy of the documents and it is the contractor's responsibility to verify the actual location of utilities and appurtenances.
16. Contractor is responsible for security of the entire project area, including fencing if necessary to protect the District and contractor from liability relative to the project. Any contractor that leaves a building unsecured will be liable for any loss incurred or the direct cost to the district to secure the building. The district's labor agreement requires a four (4) hour minimum payment for after hour call outs.
17. Any items issued to the contractor (keys, badges, alarm cards, etc.) shall be returned prior to final payment.
18. Any project over \$1,000.00 is a prevailing wage project. Labor Code Section 1770-1771. (www.dir.ca.gov). SB854 requires contractor to be registered with the Department of Industrial Relations.
19. Firearms or weapons of any type are strictly prohibited on school district property.
20. Contractor to provide payment bond for projects over \$25,000.
21. Contractor to provide performance bond for projects over \$25,000.
22. Contractor will be required to provide certified payroll records on all projects.
23. Contractors shall follow the California Department of Public Health regulations as it pertains to COVID-19.

Please read both pages of this document. Your signature indicates you have read, understand, and agree to this document.

Signature

Date

GUARANTEE

Guarantee for workmanship. We hereby guarantee that the workmanship, which we have installed in _____ from _____ through _____, has been done in accordance with the Project Documents and that the work as installed will fulfill the requirements included in the Project Documents. The undersigned agrees to repair or replace any or all of such work, together with any other adjacent work which may be displaced in connection with such repair or replacement, that may prove to be defective in workmanship or material within a period of ____ year(s) from the date of completion of the Project, ordinary wear and tear and unusual abuse or neglect excepted.

In the event of the undersigned's or undersigned surety's failure to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing by the DISTRICT, the undersigned authorizes the DISTRICT to proceed to have said defects repaired or replaced and made good at the expense of the undersigned and surety who hereby agree to pay the costs and charges therefore immediately upon demand. (General Conditions Article 46(d))

Name of Contractor

By: _____
Signature of Contractor

Print Name

Title

Contractor shall provide copy of this Guarantee to Contractor's surety.

Guarantee (continued)

Name of Subcontractor
(if work performed by
subcontractor)

By: _____
Signature of Subcontractor

Print Name

Title

Representatives to be contacted for service:

Name: _____

Address: _____

Telephone Number: _____

**ESCROW AGREEMENT FOR
SECURITY DEPOSITS IN LIEU OF RETENTION**

This Escrow Agreement is made and entered into, as of _____, 20____, by and between _____, whose address is _____, hereinafter called "DISTRICT;" _____, whose address is _____, hereinafter called "Contractor;" and, _____, whose address is _____, hereinafter called "Escrow Agent."

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

(1) Pursuant to Section 22300 of the Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by DISTRICT pursuant to the Agreement entered into between the DISTRICT and Contractor for _____ in the amount of _____,

(Name of Project)

dated _____ (hereinafter referred to as the "Agreement"). Alternatively, on written request of the Contractor, the DISTRICT shall make payments of the retention earnings directly to the Escrow Agent. When the Contractor deposits the securities as a substitute for retention earnings, the Escrow Agent shall notify the DISTRICT within ten (10) days of the deposit. The market value of the securities at the time of the substitution shall be at least equal to the cash amount then required to be withheld as retention under the terms of the Agreement between the DISTRICT and Contractor. Securities shall be held in the name of DISTRICT, and shall designate the Contractor as the beneficial owner.

(2) The DISTRICT shall make progress payments to the Contractor for those funds which otherwise would be withheld from progress payments, provided that the Escrow Agent holds securities in the form and amount specified above.

(3) When the DISTRICT makes payment of retentions earned directly to the Escrow Agent, the Escrow Agent shall hold them for the benefit of the Contractor until the time the escrow created under this Escrow Agreement is terminated. The Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when the DISTRICT pays the Escrow Agent directly.

(4) Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account and all expenses of the DISTRICT. These expenses and payment terms shall be determined by the DISTRICT, Contractor and Escrow Agent.

(5) The interest earned on the securities or the money market accounts held in escrow and all interest earned on that interest shall be for the sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to the DISTRICT.

(6) Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from the DISTRICT to the Escrow Agent that DISTRICT consents to the withdrawal of the amount sought to be withdrawn by Contractor.

(7) The DISTRICT shall have a right to draw upon the securities in the event of default by the Contractor. Upon seven (7) days' written notice to the Escrow Agent from the DISTRICT of the default, the Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by the DISTRICT.

(8) Upon receipt of written notification from the DISTRICT certifying that the Agreement is final and complete, and that the Contractor has complied with all requirements and procedures applicable to the Agreement, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payments of fees and charges.

(9) Escrow Agent shall rely on the written notifications from the DISTRICT and the Contractor pursuant to Sections (5) to (8), inclusive, of this Escrow Agreement and the DISTRICT and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of the securities and interest as set forth above.

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

On behalf of DISTRICT:

On behalf of Contractor:

Title

Title

Name

Name

Signature

Signature

Address

Address

On behalf of Escrow Agent:

Title

Name

Signature

Address

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

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

DISTRICT

Contractor

Title

Title

Name

Name

Signature

Signature

Escrow Agent

Title

Name

Signature

SHOP DRAWING TRANSMITTAL

The procedure governing shop drawing submittals is contained in the General Conditions. In addition, all Supplemental Conditions, Special Conditions and Specifications must be followed by the CONTRACTOR.

Failure to comply with all requirements will constitute grounds for return of the shop drawing for proper resubmittal. CONTRACTOR shall sequentially number each submittal.

Date: _____ Submittal No.: _____

From: _____ To: _____

Project Name: _____

This is a(n): Original _____
 Submittal _____
 2nd Submittal _____
 [] Submittal _____

Subject of Submittal:	Equipment Designation:	Specification Section(s):
-----------------------	------------------------	---------------------------

Complete either (a) or (b)

Check One:

(a) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown (no exceptions). _____

(b) We have verified that the material or equipment contained in this submittal meets all the requirements specified or shown, except for the following deviations (List deviations on attached sheet). _____

(continued on next page)

The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this Project.

Signature of Contractor or Supplier

Equipment/Material Source Information (OPTIONAL)

The name of the manufacturer of each piece of equipment that will be installed in this Project shall be set forth below. Only one manufacturer of each piece of equipment shall be listed. Bidder agrees that in the event any listed manufacturer is not specifically named in the Project Documents, it will, prior to award, submit complete information satisfactory to the Architect that such manufacturer's equipment complies with all requirements of the Project Documents. If, in the opinion of the Architect, the listed manufacturer's equipment does not comply with the Project Documents, the bid may be rejected unless, prior to award, the bidder agrees in writing to supply approved equipment without a change in the bid price.

Equipment/Material

Manufacturer

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

CHANGE ORDER NO.

(Additive)

PROJECT: _____

TO: _____

You are hereby directed to provide the extra work necessary to comply with this Change Order.

DESCRIPTION OF CHANGE: _____

COST (This cost shall not be exceeded.):

Original contract price: \$ _____
Change Order amount: \$ _____
New contract price: \$ _____

TIME FOR COMPLETION:

Original completion date: _____
Time for completion of
Change Order: _____
New completion date: _____

Contractor agrees to perform the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. The amount of the charges under this Change Order is limited to the charges allowed under Article 59 of the General Conditions. The adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order shall constitute the entire compensation and/or adjustment in the contract time due Contractor arising out of the change in the work covered by this Change Order, unless otherwise provided in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)

This Change Order is hereby agreed to, accepted and approved.

CONTRACTOR

DISTRICT

By: _____
Signature

By: _____
Signature

Print Name

Print Name

Title

Title

Date

Date

ARCHITECT

By: _____
Signature

Print Name

Title

Date

CHANGE ORDER NO.

(Deductive)

PROJECT: _____

TO: _____

You are hereby directed to comply with this Change Order.

DESCRIPTION OF CHANGE: _____

COST (This cost shall be deleted.):

Original contract price: \$ _____
Change Order amount: \$ _____
New contract price: \$ _____

TIME FOR COMPLETION:

Original completion date: _____
Time for completion of
Change Order: _____
New completion date: _____

Contractor agrees to deduct the above-described work in accordance with the above terms and in compliance with applicable sections of the Project Documents. Contractor agrees to the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in this Change Order.

No additions or deletions to this Change Order shall be allowed, except with written permission of District. Contractor accepts the terms and conditions stated above as full and final settlement of any and all claims arising from this Change Order.

(continued on next page)

This Change Order is hereby agreed to, accepted and approved.

CONTRACTOR

By: _____
Signature

Print Name

Title

Date

DISTRICT

By: _____
Signature

Print Name

Title

Date

ARCHITECT

By: _____
Signature

Print Name

Title

Date

STATE OF CALIFORNIA – DEPARTMENT OF INDUSTRIAL RELATIONS

TO: California Department of Industrial Relations
 Division of Apprenticeship Standards
 P.O. Box 420603
 San Francisco, CA 94142

AWARDING AGENCY ID NUMBER

If you do not have an ID number please contact DAS

FROM:

**EXTRACT OF
PUBLIC WORKS CONTRACT AWARD**

A CONTRACT TO PERFORM PUBLIC WORKS UNDER LABOR CODE SECTION 1777.5 HAS BEEN AWARDED TO:

1. NAME OF GENERAL CONTRACTOR			2. CONTRACTOR'S LICENSE NO		
3. MAILING ADDRESS (STREET NUMBER OR P.O. BOX)			4. CITY		
			5. ZIP CODE		6. TELEPHONE NUMBER
7. GENERAL CONTRACTOR'S CONTACT EMAIL ADDRESS			8. ADDRESS/LOCATION OF PUBLIC WORKS SITE (INCLUDE CITY AND COUNTY): Ba. County		
9. NAME OF PROJECT					
10. CONTRACT NUMBER		11. PROJECT NUMBER	12. DOLLAR AMOUNT OF CONTRACT AWARD		
13. FIRST ADVERTISED BID DATE MONTH DAY YEAR		14. CONTRACT AWARD DATE MONTH DAY YEAR	12a. ESTIMATED TOTAL PROJECT COSTS, IF DIFFERENT FROM ITEM 12 (see instructions)		
			15. WHICH STATUTE, IF ANY, APPLIES TO THIS PROJECT?		
16. STATE CONSTRUCTION BONDS If YES, List the Sources and Dollar Amount of Bond Proceeds: SOURCES			17. WILL YOU OPERATE A DIR-APPROVED LABOR COMPLIANCE PROGRAM (LCP) FOR THIS PROJECT? YES NO		
			18. IS THERE A PROJECT LABOR AGREEMENT (PLA) ASSOCIATED WITH THIS PROJECT? If yes, please email a copy to cmu@dir.ca.gov YES NO		
19. STARTING DATE (ESTIMATED OR ACTUAL) (MM/DD/YYYY)			20. COMPLETION DATE (ESTIMATED OR ACTUAL) (MM/DD/YYYY)		
21. BRIEF DESCRIPTION OF WORK TO BE PERFORMED			22. NEW CONSTRUCTION REMODELING ALTERATION, DEMOLITION, REPAIR OR MAINTENANCE		
23. CLASSIFICATION OR TYPE OF WORKER (CARPENTER, PLUMBER, ETC.) THAT WILL BE EMPLOYED BY THE CONTRACTOR(S) Please list sub-contractors and their worker classifications on page 2					
24. Is language included in the Contract Award to effectuate the requirements of sections 1771, 1774, 1775, 1776, 1777.5, 1813, and 1815 of the Labor Code? YES NO					
25. SIGNATURE		26. TITLE		27. DATE	
28. PRINTED OR TYPED NAME		29. E-MAIL ADDRESS		30. TELEPHONE NUMBERS	
If different from above, name, title, and contact information of person responsible for carrying out Awarding Body's LCP or CMU responsibilities.					
31. NAME		32. TITLE		33. E-MAIL ADDRESS	
				34. TELEPHONE NUMBER	

Duplication of this form is permissible

**CERTIFICATION – PARTICIPATION OF
DISABLED VETERAN BUSINESS ENTERPRISES
IN ACCORDANCE WITH EDUCATION CODE 17076.11**

In accordance with Education Code Section 17076.11, the _____ School District has a participation goal for Disabled Veteran Business Enterprises of at least three percent (3%) per year of the overall dollar amount of funds allocated by the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization of school buildings and expended each year by the District. At the time of execution of the contract, the Contractor will provide a statement to the District of anticipated participation of Disabled Veteran Business Enterprises in the contract. Prior to, and as a condition precedent for final payment under the contract, the Contractor will provide appropriate documentation to the District identifying the amount paid to Disabled Veteran Business Enterprises pursuant to the contract, so that the District can assess its success at meeting this goal.

The Contractor may provide the anticipated participation of Disabled Veteran Business Enterprises in terms of percentage of its total contract or the dollar amount anticipated to be paid to Disabled Veteran Business Enterprises or by providing the names of the Disabled Veteran Business Enterprises that will participate in the contract. If there is a discrepancy between the anticipated goals and the actual goals at completion of the contract or a failure to meet the anticipated goal or dollar amounts, the District will require the Contractor to provide, at the completion of the contract, a detailed statement of the reason(s) for the discrepancy or failure to meet the anticipated goals or dollar amounts.

I certify that I have read the above and will comply with the anticipated participation of Disabled Veteran Business Enterprises in this contract.

Signature

Typed or Printed Name

Title

Company

Address

City, State, Zip

Telephone

Fax

E-mail

SAMPLE

ACORD™ CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY) INSERT DATE
PRODUCER NAME & ADDRESS OF INSURANCE COMPANY	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED NAME & ADDRESS OF COMPANY/ORGANIZATION	INSURERS AFFORDING COVERAGE INSURER A: Name of Insurance Company INSURER B: Name of Insurance Company INSURER C: Name of Insurance Company INSURER D: Name of Insurance Company INSURER E: Name of Insurance Company	NAIC #

COVERAGES
 THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	MANDATORY REQUIREMENTS	Insert Date	Insert Date	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 50,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000
		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	REQUIRED IF APPLICABLE TO SERVICE	Insert Date	Insert Date	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN EA ACC \$ AUTO ONLY: AGG \$
		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$	REQUIRED UNLESS REDUCED/EXCLUDED	Insert Date	Insert Date	EACH OCCURRENCE \$ 3,000,000 AGGREGATE \$ \$ \$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	REQUIRED UNLESS REDUCED/EXCLUDED	Insert Date	Insert Date	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
		OTHER Professional Liability and/or Sexual Abuse/Molestation	MAY BE REQUIRED	Insert Date	Insert Date	\$ 1,000,000 per occurrence \$ 2,000,000 aggregate

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
 Irvine Unified School District, its Board of Trustees, officers, agents, employees, and volunteers are named as additionally insured on this policy pursuant to written contract, agreement, or memorandum of understanding. Such insurance as is afforded by this policy shall be primary, and any insurance carried by District shall be excess and noncontributory. Sexual Abuse/Molestation is not excluded from coverage under the general liability and excess/umbrella liability policies. (Provide brief description of services/dates).

CERTIFICATE HOLDER Irvine Unified School District 5050 Barranca Parkway Irvine, California 92604 Attention: Risk Management	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE SIGNATURE REQUIRED
----------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ENDORSEMENT

ADDITIONAL COVERED PARTY

COVERED PARTY

(INSERT INSURED NAME)

COVERAGE DOCUMENT

(INSERT POLICY NUMBER)

ADMINISTRATOR

(INSERT NAME OF ADMINISTRATOR)

Subject to all terms, conditions, exclusions, and endorsements, such additional covered party as is afforded by the coverage document shall also apply to the following entity but only as respects to liability arising from the actions and activities of the covered party described below.

Additional Covered Party:

Irvine Unified School District
5050 Barranca Parkway
Irvine, California 92604

Description of Activities:

Irvine Unified School District, its Board of Trustees, officers, agents, employees, and volunteers are named as additionally insured on this policy pursuant to written contract, agreement, or memorandum of understanding. Such insurance as is afforded by this policy shall be primary, and any insurance carried by District shall be excess and noncontributory.

Authorized Representative Signature
MUST APPEAR ON THE ENDORSEMENT PAGE

SAMPLE



Irvine Unified School District Insurance Requirements

All insurers must be duly licensed and admitted by the State of California.

Mandatory Requirements (unless District reduces or waives coverage requirements)

1. Commercial General Liability insurance for bodily injury and property damage, including accidental death, in the combined single limit of not less than \$1,000,000 per occurrence (\$2,000,000 aggregate) and \$3,000,000 Excess/Umbrella liability.
2. Sexual Abuse/Molestation coverage must be included under General Liability or obtained in separate policies in an amount of not less than \$1,000,000 per occurrence (\$2,000,000 aggregate) and \$3,000,000 Excess/Umbrella liability.

Minimum Limits (if required by District)

1. Automobile Liability insurance for bodily injury and property damage in an amount of not less than \$1,000,000 per occurrence with no annual aggregate limit.
2. Workers' Compensation and Employer's Liability insurance in the amount of not less than \$1,000,000 per occurrence.
3. Professional Liability insurance in an amount of not less than \$1,000,000 per occurrence (\$2,000,000 aggregate). If Professional Liability policy is made on a claims-made basis, the vendor/consultant must purchase and maintain an extending reporting period (tail coverage) for one year, unless otherwise specified.

Additional Insured Endorsement Language

"Irvine Unified School District, its Board of Trustees, officers, agents, employees, and volunteers are named as additionally insured on this policy pursuant to written contract, agreement, or memorandum of understanding. Such insurance as is afforded by this policy shall be primary, and any insurance carried by District shall be excess and noncontributory."

Additional Insured Endorsements are required to accompany Certificates of Insurance. Certificate of Insurance shall provide thirty (30) day prior written notice of cancellation.

See sample certificate on the Irvine Unified School District website at www.iusd.org.

Additional Required Documents

Certificates of Insurance must be accompanied by a list of all excluded coverages under the general liability and excess/umbrella liability policies. The exclusion policy document section may be emailed or faxed to Risk Management & Insurance. The general liability and excess/umbrella liability documents must list the corresponding policy numbers referenced on the Certificate of Insurance.

Questions may be directed to Risk Management & Insurance at Insurance@iusd.org.

Email: Insurance@iusd.org

Fax: (949) 936-5019

Revised: September 2018

APPENDIX A

Specifications

Table of Contents

Bidding and Contract Requirements

Front end documents

Division 1: General Requirements

Section 01010-- Summary of Work

Section 01300-- Submittals

Section 01500-- Temporary Facilities and Controls

Section 01740-- Warranties

Division 1 through 6

Not included in this project

Division 7: Thermal and Moisture Control

Section 07410 – Metal Roof Panels

Section 07411 – Structural Metal Roof Panels

Section 07421 – Metal Wall Panels

Section 07550 – Hot Asphalt Modified Bituminous Membrane Roofing

Section 07551 – Torch Modified Membrane Roofing

Section 07552 – Self Adhering Modified Membrane Roofing

Section 07553 – Two Ply Hot Asphalt Modified Roofing

Section 07554 – Cold Process Modified Membrane Roofing

Section 07555 – Thermoplastic Hybrid Roof System

Section 07563 – Fluid Applied Roofing Restoration

Division 8 through 16

Not included in this project

Attachments

Renewal Clause

Hypothetical Project A- Hot Asphalt Roof (Basis of Award)

Hypothetical Project B- Torch Applied Roof (Basis of Award)

Hypothetical Project C- Standing Seam Metal Roof (Basis of Award)

Hypothetical Project D- Shingle Roof (Basis of Award)

Hypothetical Project E- Restoration System (Basis of Award)

Hypothetical Project F- Tile Roof (Basis of Award)

Bid Form A

Bid Form B

Manufacturer's Checklist and Questionnaire

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Attached GENERAL CONDITIONS, BID FORM, forms a component part of this section.

1.2 SUMMARY OF WORK

A. All Roof Sections:

1. All roof drains should be water tested to assure that they are clean and free of blockages both before and after roof project.
2. Clean up all debris and damage (including but not limited to asphalt and mastic) done to grounds, building and roof top (if any).

1.3 PROTECTION

- A. The contractor shall use every available precaution to provide for the safety of the property owner, visitors to the site, and all connected with the work under the Contract.
- B. All existing facilities both above and below ground shall be protected and maintained free of damage. Existing facilities shall remain operating during the period of construction unless otherwise permitted. All access roadways must remain open to traffic unless otherwise permitted.
- C. Barricades shall be erected to fence off all construction areas from operations personnel.
- D. Safety Requirements:
 1. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
 2. Comply with federal, state, and local and owner fire and safety requirements.
 3. Advise owner whenever work is expected to be hazardous to owner employees and/or operations.
 4. Maintain a crewman as a floor guard whenever roof decking is being repaired or replaced.
 5. Maintain proper fire extinguisher within easy access whenever power tools, roofing kettles, and torches are being used. A MINIMUM OF A 2 HOUR FIRE WATCH SHALL BE STRICTLY ADHERED TO WHENEVER PROPANE TORCHES ARE IN USE.
 6. ALL SAFETY REQUIREMENTS OF THE BUILDING OWNER MUST BE FOLLOWED. NO EXCEPTIONS WILL BE PERMITTED. SAFETY ORIENTATION MEETING REQUIRED PRIOR TO PERFORMING ANY WORK.

1.4 HOUSEKEEPING

- A. Keep materials neat and orderly.
- B. Remove scrap, waste and debris from the project area each day.
- C. Maintenance of clean conditions while work is in progress and cleanup when work is completed shall be in strict accordance with the "General Conditions" of this contract.
- D. Fire protection during construction.
- E. Follow all requirements established by the building owner.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this section.
- B. Related Sections:
 - 1. Notice to Bidders
 - 2. Instructions to Bidders

1.2 SUBMITTAL PROCEDURES

- A. Coordination of submittals
 - 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
 - 2. Verify that each item and the submittal for it conform in ALL respects with the specified requirements.
 - 3. By affixing the Contractor's signature or approval stamp to each submittal, he/she certifies that this coordination has been performed.
- B. Substitutions
 - 1. The Contract is based on the standards of quality established in the Contract Documents. Use of any materials or methods other than those specified will require the proper submittal information outlined in paragraph 1.3 of this section. These submittals must be received a minimum of ten (10) days prior to the bid opening and be pre-approved in written addenda before bids are accepted by the building owner.
 - 2. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved by addenda for this Work by the Owner prior to receipt of bids.
 - 3. Building owner reserves the right to final authority on acceptance or rejection of any substitute.
 - 4. Request for substitutions will be accepted from prime bidders only. Requests for substitutions from parties not bidding on the project as a primary contractor will not be considered.

1.3 SUBMITTAL DOCUMENTS FOR SUBSTITUTION

- A. All proposed material substitutions must submit the following documentation with their submittals ten (10) days prior to the bid due date.

1. A list of (3) jobs of similar size where the proposed alternate materials have been used, under similar conditions as specified.
2. Accredited testing laboratory certificate verifying physical performance attributes of materials meet specifications.
3. Copy of roofing supplier's warranty which meets all requirements of the specified warranty according to Section 01740 and each specific applicable specification section.
4. Product samples of the smallest standard packaged size of any material being submitted as an equal.
5. Individual product identification, including manufacturer's literature and MSDS sheets.
6. Letter from the material supplier signed by a corporate officer, on company stationary, confirming that all bidding documents have been approved, that the company will provide a manufacturer's representative that is a full time employee of their company that will be on site three days per week during installation of any and all products, and meets the requirements for suitability, and that the specified warranty shall be provided upon satisfactory completion of the project.
7. One manufacturer must be able to warranty all products being specified, please provide a notarized letter from an officer of the manufacturing company that includes a list of all products included under their warranties.
8. Verify material supplier is a financially stable organization with the ability to protect the building Owner from both product liability and warranty claims relating to roofing that might arise during the course of the warranty period. It is the intent of the building Owner to establish requirements that will protect him/her, be fair to all suppliers and ensure that requirements are in line with the exposure of the supplier.
9. Provide the address, size (square footage), and number manufacturing employees, and number of years their factory or factories has been owned or leased.
10. Provide corporate financial statements showing the company's current financial status. An asset to liability ration of 3:1 is required by the warranting roofing manufacturer.
11. Provide all information listed in the "Manufacture's Checklist and Questionnaire"
12. In addition, any proposed substitute materials or methods must also be accompanied by the following documentation:
 - a. A complete specification of the proposed substitute. If, after review, the substitute is found to be acceptable, copies will be provided to each bidder who has picked up the original specification by a written addenda.
 - b. Written explanation of why substitutions should be considered is required.
13. Manufacturer's inspection reports:
 - a. **Daily** reports to owner from full time material manufacturer's employee. The reports will include pictures of the days progress made by the contractor and a detailed written report as to the work performed that day.
 - b. Roofing manufacturer's inspector must have a minimum of 5 years experience with said roofing manufacturer and be an employee of the manufacturer

warranting the roof system. A signed affidavit should be submitted as to the hire date of said employee of roofing manufacturer.

- c. The roofing manufacturer will provide an annual inspection of the roof system with a detailed report outlining the inspection. The report will notify the owner of any routine housekeeping such as cleaning of the drains, storm damage, etc.

END OF SECTION

SECTION 1500

TEMPORARY FACILITIES & CONTROLS

PART 1 GENERAL

1.1 RELATED SECTIONS

- A. Drawing and Section 1 – General Information and Section 2 – Contract Terms and other sections of Division 1 apply to this Section.

1.2 TEMPORARY ELECTRICITY – DESCRIPTION OF REQUIREMENTS

- A. Cost: By Owner, connect to Owner’s existing power service. Do not disrupt Owner’s use of service. Owner will pay cost of energy used. Exercise measures to conserve energy.
- B. Complement existing power service capacity and characteristics as required.
- C. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Each trade shall provide flexible power cords as required.

1.3 TELEPHONE SERVICE

- A. Cell phone usage by the Contractors should be utilized. Emergency phone usage may be permitted by school district.

1.4 TEMPORARY WATER SERVICE

- A. Connect to existing water source for construction operations at time of project mobilization.
- B. SCHOOL DISTRICT will pay cost of water used. Exercise measures to conserve water.
- C. Drinking water is to be provided by the Contractors via containers, tap-dispenser, etc. including paper cup supplies.

1.5 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain a minimum of one (1) sanitary facility and enclosure. Existing facility use is not permitted. Provide at time of project mobilization. Location to be approved by SCHOOL DISTRICT.

1.6 PARKING

- A. Arrange for surface parking areas to accommodate construction personnel with SCHOOL DISTRICT.

1.7 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, materials, prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or used of temporary work.
- C. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01740

WARRANTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and other Division 1 Specification sections, apply to work of this section.
- B. Related Sections
 - 1. Section 01300 - Submittals

1.02 WARRANTY

- A. The modified bitumen roofs (torch, cold process, self adhering, and hot asphalt), and standing seam metal roofs will all receive a 30 year No Dollar Limit Labor and Material warranty that is non-prorated. Tile and Shingle roof systems will receive a 10 year warranty from the underlayment manufacturer. Urethane roof restoration systems will receive a 15 year warranty. Wall panel system will receive a 10 year warranty.
 - 1. The warranty shall cover all insulation and sheet metal flashings.
 - 2. There will be no additional charges for the warranty inspections or fees for warranty extensions.
 - 3. Warranty shall cover all labor and materials, be non-prorated, and have no dollar limit
- B. The material manufacturer will provide a free annual inspection for the duration of the warranty.
- C. The warranty shall cover all roof related components installed under this specification and shall not be limited to only those materials supplied by the material supplier issuing the warranty.
- D. Specifically - The warranty submitted by the manufacturer of record will cover:
 - 1. All labor.
 - 2. Materials by the manufacturer of record.
 - 3. Materials by others.
- E. The contractor shall issue to the material supplier a 2 year labor warranty upon completion of the roof and acceptance by the material supplier's representative and the owner.

1.03 MAINTENANCE REQUIREMENTS (by owner)

- A. Clean all drains, gutters and down spouts.

1.04 THE MANUFACTURER OF RECORD

- A. Will not charge for any warranty problem inspections.
- B. Provide an annual inspection of the roof system at the request of the building owner.

END OF SECTION

SECTION 07410
METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Standing seam metal roofing system.
- B. Standing seam metal roofing accessories.
- C. Metal roofing accessories.

1.2 REFERENCES

- A. ASTM E 283 - Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- B. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- C. ASTM E 1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
- D. ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
- E. ASTM E 1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
- F. ASTM E 2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head.
- G. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.
- H. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- I. FM 4470 Approval Standard for Class 1 Panel Roofs.
- J. FM 4471 - Class 1 Panel Roof; Factory Mutual Research Corporation.
- K. UL 263 - Fire Tests of Building Constructions and Materials.
- L. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies.
- M. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
- N. UL 1897 - Uplift Test for Roof Covering Systems.
- O. ICC-ES AC166 - Test Procedure for Wind Driven Rain Resistance of Metal Roof Coverings.
- P. SMACNA - Architectural Sheet Metal Manual.
- Q. National Coil Coating Association (NCCA)

R. NRCA - The NRCA Roofing and Waterproofing Manual.

1.3 DESIGN / PERFORMANCE REQUIREMENTS

A. Standing Seam Roofing System: R-Mer Loc

1. Thermal Expansion and Contraction:
 - a. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
 - b. Design temperature differential shall be not less than 200 degrees F.
 - c. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
 - d. Location of metal roofing rigid connector shall be at roof ridge unless otherwise approved by the Architect. Metal ridge connector may require design as per job conditions by specified manufacturer.
 - e. ASTM E 1592: Capacity shall be determined using pleated airbag method in accordance with ASTM E 1592, testing of sheet metal roof panels. Allowable safe working loads shall be determined by dividing the ultimate test load by the safety factor specified above.
2. Uniform Positive Load Capacity.
 - a. Installed roof system shall be capable of resisting the following positive uniform roof loads: Roof Live Load of 20 psf;
 - b. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
3. Underwriters' Laboratories, Inc., (UL):
 - a. Underwriters' Laboratories, Inc., (UL) fire resistance P ratings for roof assemblies: If applicable, panel system shall be approved for use in an appropriate Construction Assembly, as defined by UL 263.
 - b. Underwriters' Laboratories, Inc., (UL) Class A fire rating per UL 790.
4. ASTM E 1680: Static pressure air infiltration (roof panels):
 - a. Pressure Leakage Rate
 - 1) 1.57 PSF 0.0054 cfm/sq.ft.
 - 2) 6.24 PSF 0.0054 cfm/sq.ft.
 - 3) 20.0 PSF 0.0027 cfm/sq.ft.
5. ASTM E 1646: Static pressure water infiltration (roof panels):
 - a. Pressure Result:
 - 1) 5 Gal/Hr per S.F. and Static No Leakage
 - 2) Pressure of 20.0 Psf. for 15 minutes
6. Capacities for gauge, span or loading other than those tested may be determined by interpolation of test results within the range of test data. Extrapolation for conditions outside test range is not acceptable.
7. Submit third party validation of environmental claims, prepared UL Environment, for all metal roof panels containing recycled content and/or bio based content.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Submit product data, test reports, and certifications in accordance with quality assurance and performance requirements specified herein.
- C. Design Loads: Submit manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those specified herein.
- D. Dead Load Evaluation: Provide documentation from a licensed structural engineer of a

structural evaluation of the roof structure and it's suitability for the new imposed roofing loads.

- E. Shop Drawings: Prepared specifically for this project; showing dimensions of metal roofing and accessories, fastening details and connections and interface with other products.
- F. 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.
- G. Selection Samples: For each finish product specified, two complete sets of samples representing manufacturer's full range of available colors and textures.
- H. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and textures.
- I. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- J. Closeout Submittals:
 - 1. Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of installed roof system.
 - 2. Provide executed copy of manufacturer's warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001 approval.
- B. Installer Qualifications: Certified and approved installer of the sheet metal roofing manufacturer.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.
- C. Objectives include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
 - 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
 - 5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.

8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
 1. Store materials above ground, on skids.
 2. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation buildup or moisture entrapment on the materials.

1.8 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.

1.9 WARRANTY

- A. Warranty:
 1. 30 year limited watertight warranty for roofs over a 3:12 slope.
 2. 20 year limited watertight warranty for roofs with a 1:5 to 3:12 slope.
 3. Provide installers 2 year warranty covering roofing system installation and watertightness.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770

2.2 STANDING SEAM METAL ROOFING

- A. R-Mer Loc: Panel with 1-3/4 inch high standing seam with 3/8-inch high clearance between panel and substrate.
 1. Width of Panel:
 - a. 16 inches.
 2. Seam Height: 1-3/4 inch.
 3. Slope: Open Purlins, Slopes down to 3:12.
 4. Slope: Solid Substrate, no framing components, Slopes down to 1-1/2 :12.
 5. Panel Clips: Minimum 18 gauge, galvanized steel or stainless steel. Two-piece clips are unacceptable.
 6. Passes:
 - a. ASTM E 1592
 - b. ASTM E 1680
 - c. ASTM E 1646
 - d. Class A Fire Rating, UL-790.
 - e. UL (Class 90) 580.
 7. Panel material:
 - a. Aluminum, 3105-H14 alloy, smooth as per ASTM B 209, .040 inch thickness.
 8. Flashing and flat stock material: Fabricate in profiles indicated on Drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
 9. Coated Finish:

- a. Exposed surfaces for coated panels:
 - 1) Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
 - b. Unexposed surfaces for coated panels shall be baked-on polyester coating with .20 to .30 dry film thickness (TDF).
10. Accessory Components:
- a. Gable anchor clips shall be minimum 18 gauge, galvanized steel or stainless steel.
 - b. Fasteners:
 - 1) Concealed fasteners: Corrosion resistant steel fasteners (zinc plated or equal) designed to meet structural loading requirements. Provide #14 as minimum fastener size.
 - 2) Exposed fasteners: Series 410 stainless steel fasteners or one-eighth (1/8) inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the standing seam panels.
 - c. Closures: Factory precut closed cell foam meeting ASTM D 1056 or ASTM D 3575, with metal trim matching panels when used at hip, ridge, jamb, and rake.
 - d. Provide all miscellaneous accessories for complete installation.

2.3 STANDING SEAM METAL ROOFING ACCESSORIES

- A. Underlayment:
 - 1. R-Mer Seal, self adhesive membrane, installed in accordance with manufacturer's recommendations.
- B. Sealant:
 - 1. Concealed Applications: Non-Curing Butyl Sealant - Schnee-Morehead, Inc. SM5430 Acryl-R, or equal.
 - 2. Exposed Applications: UV Resistant Tripolymer Sealant - Geocel Corporation, 2300 Tripolymer Sealant, or equal.

2.4 METAL ROOFING ACCESSORIES

- A. R-Mer SS Sheet Stock: High gloss, factory painted aluminum
 - 1. Material and Thickness:
 - a. 0.040 inch aluminum
 - 2. Color: Standard Colors

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive metal roofing. Notify the Architect in writing of any defective conditions encountered. Starting of work shall constitute acceptance of such conditions.
- B. Structural Deck Substrate:
 - 1. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped.
 - 2. Verify deck is dry and joints are solidly supported and fastened.
 - 3. Verify wood nailers are installed and correctly located. Do not use pressure-treated wood containing salt-based preservatives or materials corrosive to steel.
- C. Structural Framing Substrate:
 - 1. Verify primary and secondary framing members are installed and fastened, properly aligned and sloped.

- 2. Verify damaged shop coatings are repaired with touch up paint.
- D. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.
- E. Correct defective conditions before beginning work.

3.2 INSTALLATION

- A. Install in conformance with the NRCA Roofing and Waterproofing Manual and Manufacturers installation requirements.
- B. Form panel shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.
- C. Install underlayment and eave protection sheet underlayment as recommended by the Manufacturer.
- D. Install all panels continuous from ridge to eave. Transverse seams are not permitted.
- E. Panel lengths that exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.
- F. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap, if required, and at trim details in accordance with the Manufacturer's requirements.
- G. Where not otherwise indicated conform to SMACNA details including flashings and trim.
- H. Install sealants where indicated to clean dry surfaces only without skips or voids..
- I. Install metal edge treatment in accordance with the manufacturer's instructions and the approved shop drawings.
- J. Install metal roofing accessories in accordance with the manufacturer's instructions and the approved shop drawings.

3.3 PROTECTION

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

END OF SECTION

SECTION 07411
STRUCTURAL METAL ROOF PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Standing seam metal roofing system.
- B. Standing seam metal roofing accessories.
- C. Metal roofing accessories.

1.2 REFERENCES

- A. ASTM E 283 - Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- B. ASTM E 331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- C. ASTM E 1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
- D. ASTM E 1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
- E. ASTM E 1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
- F. ASTM E 2140 - Standard Test Method for Water Penetration of Metal Roof Panel Systems by Static Water Pressure Head.
- G. AAMA 501.1 - Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.
- H. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- I. FM 4470 Approval Standard for Class 1 Panel Roofs.
- J. FM 4471 - Class 1 Panel Roof; Factory Mutual Research Corporation.
- K. UL 263 - Fire Tests of Building Constructions and Materials.
- L. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies.
- M. UL 790 - Standard Test Methods for Fire Tests of Roof Coverings.
- N. UL 1897 - Uplift Test for Roof Covering Systems.
- O. ICC-ES AC166 - Test Procedure for Wind Driven Rain Resistance of Metal Roof Coverings.
- P. SMACNA - Architectural Sheet Metal Manual.
- Q. National Coil Coating Association (NCCA)

R. NRCA - The NRCA Roofing and Waterproofing Manual.

1.3 DESIGN / PERFORMANCE REQUIREMENTS

A. Standing Seam Roofing System: R-Mer Span

1. Thermal Expansion and Contraction:
 - a. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
 - b. Design temperature differential shall be not less than 200 degrees F.
 - c. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
 - d. Location of metal roofing rigid connector shall be at roof ridge unless otherwise approved by the Project Architect. Metal ridge connector may require design as per job conditions by specified manufacturer.
 - e. ASTM E 1592: Capacity shall be determined using pleated airbag method in accordance with ASTM E 1592, testing of sheet metal roof panels. Allowable safe working loads shall be determined by dividing the ultimate test load by the safety factor specified above.
 - f. Underwriters' Laboratories, Inc., (UL), wind uplift resistance classification: Roof assembly shall be classified as Class 1-90, as defined by UL 580
 - g. FM 4471: Submit test report for negative wind uplift pressures no less than that specified. Roof system must have approval over the substrate specified.
2. Uniform Positive Load Capacity.
 - a. Installed roof system shall be capable of resisting the following positive uniform roof loads: Roof Live Load of 20 psf; Roof Snow Load of ___ psf.
 - b. Dead Load: Loading of the roof structure, due to tear off of existing, and/or installation of new roofing materials shall not exceed the present loading due to weight of the existing roofing system.
 - c. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.
3. Underwriters' Laboratories, Inc., (UL):
 - a. Underwriters' Laboratories, Inc., (UL) fire resistance P ratings for roof assemblies: If applicable, panel system shall be approved for use in an appropriate Construction Assembly, as defined by UL 263.
 - b. Underwriters' Laboratories, Inc., (UL) Class A fire rating per UL 790.
4. ASTM E 283: Static pressure air infiltration (doors, windows, curtain walls):
 - a. Pressure Leakage Rate
 - 1) 1.57 PSF 0.0007 cfm/sq.ft.
 - 2) 6.24 PSF 0.0002 cfm/sq.ft.
 - 3) 20.0 PSF 0.0036 cfm/sq.ft.
5. ASTM E 331: Static pressure water infiltration (doors, windows, curtain walls):
 - a. Pressure Result:
 - 1) 5 Gal. /Hr. per S.F. and Static No Leakage
 - 2) Pressure of 20.0 Psf. for 15 minutes
6. ASTM E 1646: Static pressure water infiltration (roof panels):
 - a. Pressure Result:
 - 1) 5 Gal. /Hr. per S.F. and Static No Leakage
 - 2) Pressure of 20.0 Psf for 15 minutes
7. Capacities for gauge, span or loading other than those tested may be determined by interpolation of test results within the range of test data. Extrapolations for conditions outside test range are not acceptable.
8. Water penetration (dynamic pressure): No water penetration, other than condensation, when exposed to dynamic rain and 70 mph wind velocities for not less than five minutes duration, when tested in accord with principles of AAMA 501.1.

9. Wind and wind driven rain resistance: No water penetration or panel movement when exposed to 110 mph wind velocities when tested in accordance with TAS 100.
10. Installed roof system assembly shall show that it can resist the calculated roof pressure in accordance with the test results of TAS 125.
11. Water penetration in low slope applications: No water penetration or panel movement when subject to 6 inch head of water for 6 hours when tested in accordance with the ASTM E 2140 and when subject to 6 inch head of water for 7 days when tested in accordance with the TAS 114 appendix G.
12. Submit third party validation of environmental claims, prepared UL Environment, for all metal roof panels containing recycled content and/or bio based content.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Submit product data, test reports, and certifications in accordance with quality assurance and performance requirements specified herein.
- C. Design Loads: Submit manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those specified herein.
- D. Shop Drawings: Prepared specifically for this project; showing dimensions of metal roofing and accessories, fastening details and connections and interface with other products.
- 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.
- F. Selection Samples: For each finish product specified, two complete sets of samples representing manufacturer's full range of available colors and textures.
- G. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and textures.
- H. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- I. Closeout Submittals:
 1. Provide manufacturer's maintenance instructions that include recommendations for periodic checking and maintenance of installed roof system.
 2. Provide executed copy of manufacturer's warranty.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001 approval.
- B. Installer Qualifications: Certified and approved installer of the sheet metal roofing manufacturer.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing,

installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

C. Objectives include:

1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
 1. Store materials above ground, on skids.
 2. Protect material with waterproof covering and allow sufficient ventilation to prevent condensation buildup or moisture entrapment on the materials.

1.8 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.

1.9 WARRANTY

- A. Warranty:
 1. 30 year, no dollar limit, warranty.
 2. Provide installers 2 year warranty covering roofing system installation and water-tightness.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770

2.2 STANDING SEAM METAL ROOFING

- A. R-Mer Span:
 1. Width of Standing T-Seam Panel: 1 inch T-seam.
 - a. 16 inches.

2. Standing Seam: 2-3/8 inch tall mechanically seamed with factory installed hot melt sealant in-seam cap. Panel/Cap is configured with a total of 4 layers of metal surrounding anchor clip.
3. Panel Profile: Provided with minimum 1-1/2 inches wide elevated mesa's every 2 inches on center continuous throughout panel.
 - a. Slope: Open Purlins or Solid Substrate down to 1/4:12.
4. Panel material:
 - a. Aluminum, 3105-H14 alloy, smooth as per ASTM B 209, .040 inch thickness.
5. Flashing and flat stock material: Fabricate in profiles indicated on Drawings of same material, thickness, and finish as roof system, unless indicated otherwise.
6. Coated Finish:
 - a. Exposed surfaces for coated panels:
 - 1) Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
7. Accessory Components:
 - a. Anchor Clips:
 - 1) Concealed Standard Anchor Clips: Clips 16 gauge stainless steel, alloy 316L, 1 piece clip with projecting legs for additional panel alignment and provision for unlimited thermal movement in each direction along the longitudinal dimension.
 - b. Gable anchor clips for:
 - 1) Standing Seam style.
 - a) Stainless steel, alloy 316L, minimum thickness: 16 gauge.
 - c. Fasteners:
 - 1) Concealed fasteners: Corrosion resistant steel fasteners (zinc plated, stainless steel or equal) designed to meet structural loading requirements.
 - 2) Exposed fasteners: Series 410 stainless steel fasteners or 1/8 inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the standing seam panels.
 - d. Closures: Factory precut closed cell foam meeting ASTM D 1056 or ASTM D 3575, enclosed in metal channel matching panels when used at hip, ridge, rake, and jamb.
 - e. Provide all miscellaneous accessories for complete installation.

2.3 STANDING SEAM METAL ROOFING ACCESSORIES

- A. Underlayment:
 1. R-Mer Seal, self adhesive membrane, installed in accordance with manufacturer's recommendations.

2.4 METAL ROOFING ACCESSORIES

- A. R-Mer SS Sheet Stock: High gloss, factory painted aluminum
 1. Material and Thickness:
 - a. 0.040 inch aluminum
 2. Color: Standard Colors

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive metal roofing. Notify the Architect in writing of any defective conditions encountered. Starting of work shall constitute acceptance of such conditions.
- B. Structural Deck Substrate:

1. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, and properly sloped.
 2. Verify deck is dry and joints are solidly supported and fastened.
 3. Verify wood nailers are installed and correctly located. Do not use pressure-treated wood containing salt-based preservatives or materials corrosive to steel.
- C. Structural Framing Substrate:
1. Verify primary and secondary framing members are installed and fastened, properly aligned and sloped.
 2. Verify damaged shop coatings are repaired with touch up paint.
- D. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.
- E. Correct defective conditions before beginning work.

3.2 INSTALLATION

- A. Install in conformance with the NRCA Roofing and Waterproofing Manual and Manufacturers installation requirements.
- B. Form panel shape as indicated on Drawings, accurate in size, square, and free from distortion or defects.
- C. Install underlayment and eave protection sheet underlayment as recommended by the Manufacturer.
- D. Install all panels continuous from ridge to eave. Transverse seams are not permitted.
- E. Panel lengths that exceed maximum shipping lengths shall be field rolled on equipment owned by the panel manufacturer. Seam sealant must be factory applied.
- F. Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap, if required, and at trim details in accordance with the Manufacturer's requirements.
- G. Where not otherwise indicated conform to SMACNA details including flashings and trim.
- H. Install sealants where indicated to clean dry surfaces only without skips or voids..
- I. Install metal edge treatment in accordance with the manufacturer's instructions and the approved shop drawings.
- J. Install metal roofing accessories in accordance with the manufacturer's instructions and the approved shop drawings.

3.3 PROTECTION

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

END OF SECTION

SECTION 07421

METAL WALL PANELS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.

1.2 SUMMARY

- A. This section includes pre-formed flat seam wall panel system complete with anchor clips, fasteners, flashing, and trim.

1.3 REFERENCES

- A. American Iron and Steel Institute (AISI):
 1. Specification for the Design of Cold-Formed Steel Structural Members.
 2. American Society for Testing and Materials (ASTM): B.
 3. ASTM A240 Specification for Heat Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels: C.
 4. ASTM A792 Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 5. ASTM A875 Specification for Steel Sheet, Zinc-5% Aluminum Alloy-Coated by the Hot-Dip Process.
 6. ASTM B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 7. ASTM B370 Specification for Copper and Sheet and Strip for Building Construction
 8. ASTM E283 Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
 9. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Air Pressure Differences
 10. ASTM E331 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights, and Curtain Walls by Uniform Static Air Pressure Difference
- B. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):
 1. Architectural Sheet Metal Manual

1.4 SUBMITTALS FOR REVIEW

- A. Shop Drawings: Show wall panels (and roofing system, if applicable) with flashings and accessories in elevations, sections and details. Include metal thickness and finishes, panel lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Indicate relationships with adjacent and interfacing work. Indicate fastener types and spacing; and provide fastener pullout values. Shop drawings must be completed by the wall panel manufacturer's engineering department. Any and/or all changes recommended by the successful bidder must be approved by the manufacturer in writing prior to submittal.

- B. Product Data: Include manufacturer's detailed material and system description, concealed anchor clips, sealant and closure installation instructions, and finish specifications. Indicate fastener types and spacing; and required fastener pullout values.
- C. Samples: Provide full-size samples of the following materials and system components. Samples shall be of identical material type, thickness, panel width, and material grade/alloy as the system specified for this project.
 - 1. Submit sample of panel section, at least 4" long x full panel width showing panel profile and also a sample of color selected.
 - 2. Submit sample of foam closure strips to fit inside and outside specified panel profile.
 - 3. Submit sample of panel fasteners.
- D. Specimen Warranty: Provide an unexecuted copy of the warranty specified for this Project, identifying the terms and conditions required of the Manufacturer and the Owner.
- E. Any material submitted as equal to 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 approval will be rejected for non-conformance.

1.5 SUBMITTALS FOR INFORMATION

- A. Design and Test Reports: Provide the following certified test reports from an independent testing laboratory:
 - 1. Independent laboratory testing report for system design load and seam integrity.
 - 2. A letter from an officer of the manufacturing company certifying that the materials furnished for this project are the same as represented in tests and supporting data.
 - 3. Manufacturer's verifications that the panels are factory roll formed.
 - 4. ASTM E283 Test results must clearly demonstrate compliance with the performance requirements specified in article 1.9 ASTM E331 Test Report.
 - 5. ASTM E330 Test results must clearly demonstrate compliance with the performance requirements specified in article 1.9.
 - 6. ASTM E331 Test results must clearly demonstrate compliance with the performance requirements specified in article 1.9.
- B. Mill production reports certifying that the metal thicknesses are within allowable tolerances of the nominal or minimum thickness or gauge specified.
- C. Design Loads: Submit copy of manufacturer's minimum design load calculations according to ASCE 7, Method 2 for Components and Cladding. In no case shall the design loads be taken to be less than those detailed in Design and Performance Criteria article.
- D. Qualification Data for Wall System Installer: Refer to Quality Assurance Article below.
- E. Certification of work progress inspection frequency: Refer to Quality Assurance Article below.
- F. Pre-installation Conference Proceedings: Refer to Quality Assurance Article below.

- G. Test Reports: Submit third party validation of environmental claims, prepared by UL Environment, for all metal wall panels containing recycled content and/or bio based content.

1.6 CONTRACT CLOSEOUT SUBMITTALS

- A. General: Comply with Requirements of Division 01 Section Closeout Submittals.
- B. Special Project Warranty: Provide specified warranty for the Project, executed by the authorized agent of the Manufacturer.
- C. Wall Panel Maintenance Instructions: Provide a manual of manufacturer's recommendations for maintenance of installed systems.
- D. Insurance Certification: Assist Owner in preparation and submittal of wall installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on wall panel system installation and associated work.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an Installer who has completed the Manufacturer's Approved Contractor course and is currently certified for the installation of the specified system.
- B. If required, fabricator/installer shall submit work experience and evidence of adequate financial Responsibility. The Owner's representative reserves the right to inspect fabrication facilities in determining qualifications.
- C. Source Limitations: Obtain all components of the wall panel system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the Manufacturer.
 - 1. 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.
 - 2. Manufacturer shall have direct authority and control over all fabrication of steel components as well as the raw materials used in their fabrication.
- D. Source Quality Control: Manufacturer shall have in place a documented, standardized quality control program such as ISO-9001 approval.
- E. Engage the Manufacturer's Field Representative to conduct required periodic inspections of work in progress as described herein and shall furnish written documentation of all such inspections.
- F. Manufacturer shall provide the Owner project with a written statement that they will provide a site inspection three days per week that confirms that the project is being constructed as specified, by an experienced, full time employee of the company.
- G. Alternate Manufacturers: The following manufacturer criteria must be submitted. Alternate systems will not be considered for approval unless each of these items has been submitted for review at least 10 business days prior to bid opening.
 - 1. Submit each item listed in article 1.4 (A through E) for evaluation of the proposed system.
 - 2. Tests shall have been made for identical systems within the ranges of specified performance criteria.
 - 3. Empirical calculations for wall performance shall only be acceptable for positive loads.

4. A list of a minimum of five (5) jobs where the proposed alternate material was used under similar conditions. The reference list shall include date of project, size of project, project address, and telephone number of architect/owner contact.
5. A financial statement demonstrating a minimum of a 3:1 ratio of assets to liabilities.
6. A written statement from the manufacturer stating that they will provide the building owner with a daily site inspection for a minimum of one (1) hour per day by an experienced, full time employee of the company.
7. A written statement from the manufacturer stating that they will provide the engineer of record with a daily site inspection by an experienced full time employee of the company.
8. A written statement from a corporate officer of the manufacturing company stating that he or she has reviewed the specifications and confirms that the proposed system meets or exceeds all performance requirements listed as well as meets the panel size, gauge, weight, clip design, sealant design, uplift pressures and height of the vertical seam.
9. A copy of manufacturer's warranty.
10. Proof that the manufacturer has been in business for a minimum number of years equal to the warranty period required for this project.

1.8 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-installation conference approximately two (2) weeks before scheduled commencement of system installation and associated work.
- B. Require attendance of installer of each component of associated work which must precede or follow wall panel work (including mechanical or electrical work if any), Architect, Owner, system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, testing agencies and governing authorities.
- C. Objectives of conference to include:
 1. Review foreseeable methods and procedures related to work, including set up and mobilization areas for stored material and work area.
 2. Tour representative areas of building, inspect and discuss condition of substrates, penetrations and other preparatory work performed by others.
 3. Review structural loading limitations of wall framing and inspect for unacceptable variations in planarity.
 4. Review system requirements (drawings, specifications and other contract documents).
 5. Review required submittals both completed and yet to be completed.
 6. Review and finalize construction schedule related to work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 7. Review required inspection, testing, certifying and material usage accounting procedures.
 8. Review weather and forecasted weather conditions and procedures for unfavorable conditions, including possibility of temporary wall protection (if not mandatory requirement).
 9. Record discussion of conference including decisions and agreements (or disagreements) reached. 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.
 10. Review notification procedures for weather or non-working days.

- D. The Owner's Representative will be designate one of the conference participants to record the proceedings and promptly distribute them to the participants for record.
- E. The intent of the conference is to resolve issues affecting the installation and performance of wall panel work. Do not proceed with work until such issues are resolved the satisfaction of the Owner and Engineer of Record. This shall not be construed as interference with the progress of Work on the part of the Owner or Engineer of Record.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Manufacturer's Responsibilities:
 - 1. All panels shall be shipped from the manufacturer with a strippable film or similar packaging material separating the individual panels to minimize flexing, stressing, scratching or otherwise damaging the material during transit to the job.
 - 2. Fully cover steel with tarpaulins or similar protective cover during transit to prevent dirt and debris from coming in contact with the finished goods.
- B. Installer's Responsibilities:
 - 1. Stack pre-finished materials to prevent twisting, bending, abrasion and denting and elevate one end to facilitate moisture run-off.
 - 2. Unload wall panels using a boom or crane, supporting the panels in at least two locations during lifting, and never lift more than three panels at a time.
 - 3. Protect moisture-sensitive materials and water-based from the weather.
 - 4. Inspect materials upon delivery. Reject and remove physically damaged or marred material from project site.

1.10 PROJECT CONDITIONS

- A. Determine that work of other trades will not hamper or conflict with necessary fabrication and storage and protection requirements for wall panel system.
 - 1. Protection:
 - a. Protect completed work from subsequent construction operations. Comply with Manufacturer's recommendations.
 - b. Do not encumber the site with stored materials or equipment.
 - c. Do not support wall-mounted equipment directly on the wall panel system.
- B. Ascertain that work of other trades which penetrates the wall or is to be made watertight by the wall is in place an approved prior to installation.

1.11 DESIGN AND PERFORMANCE CRITERIA

- A. Thermal Expansion and Contraction:
 - 1. Completed metal wall panel and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, producing excess stress on structure, anchors or fasteners, or reducing performance ability.
 - 2. The design temperature differential shall be not less than <insert design temperature differential [200] °F.
 - 3. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.
- B. Uniform wind load capacity:

1. Installed wall panel system shall withstand negative design wind loading pressures complying with the following criteria. Anchor clips shall be installed exactly as specified in article 3.
- C. ASTM E283: Static pressure air infiltration (doors, windows, curtain walls):
1. Pressure Leakage Rate
 - a. 1.57 PSF 0.0033 cfm/sq. ft.
 - b. 6.24 PSF 0.0056 cfm/sq. ft.
 - c. 12.0 PSF 0.062 cfm/sq. ft.
 - d. 15.0 PSF 0.064 cfm/sq. ft.
 - e. 20.0 PSF 0.074 cfm/sq. ft.
- D. ASTM E330: Uniform static load test for structural performance for 1 ½" panel profile: Test results must provide an allowable pressure of no less than:
1. 42 lbs./ sq. ft. For 3'-0" spans
 2. 52 lbs./ sq. ft. for 1'-0" span
- E. ASTM E331: Static pressure water infiltration (doors, windows, curtain walls):
1. Pressure Result:
 - a. 5 Gal./Hr. per S.F. and Static No Leakage
 - b. Pressure of 20.0 Psf. For 15 minutes.

1.12 WARRANTIES

- A. Manufacturer shall execute a single warranty covering of the following criteria. Multiple-source warranties are not acceptable.
1. Manufacturer's ten (10) year watertight warranty.
 2. Manufacturer's standard twenty (20) year finish warranty covering checking, crazing, peeling, chalking, fading, or adhesion.
 3. Installer's two (2) year warranty covering wall panel system installation.
 4. Warranties shall commence on date of Substantial Completion.
 5. Provide a single warranty by a single approved manufacturer for roof areas, wall areas, and transitions between the two systems, if applicable.

1.13 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the wall panel system manufacturer will inspect the work not less than 3 days per week. In addition, the manufacturer will:
1. Keep the Architect or Owner informed as to the progress and quality of the work as observed.
 2. Provide periodic job site inspections a minimum of three (3) day per week.
 3. Report to the Architect in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
 4. Confirm after completion that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

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 here in 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.

2.2 ACCEPTABLE MANUFACTURERS

- A. The design is based upon R-MER Wall Pan wall panel systems engineered and manufactured by:
The Garland Company
3800 East 91st Street
Cleveland, Ohio 44105
Steve Lampman
Telephone: (949)-322-1770
- B. Site Formed Panels: Bidder will not be allowed to supply panels formed at the job-site on portable roll formers; metal panels must be factory pre-manufactured and engineered for this project.

2.3 METAL WALL PANEL SYSTEM

- A. General
 - 1. The products, quality, and performance criteria specified shall be regarded as the minimum standard of quality required for the project.
 - 2. Basis of Design: R-MER Wall Pan System manufactured by The Garland Company, Cleveland, OH.
- B. Materials
 - Panel material: .040" thickness aluminum, 3105-H14 alloy, smooth as per ASTM B209-96.
 - 1. Flashing and flat stock material: Fabricate in profiles indicated on drawings of same material, thickness, and finish as wall panel system, unless indicated otherwise.
- C. Finish on surfaces:
 - 1. Exposed surfaces for coated panels:
 - a. Two coat coil applied, baked-on full-strength (70% resin) fluorocarbon coating system (polyvinylidene fluoride, PVF2), applied by manufacturer's approved applicator.
 - b. Color shall be Standard Color.
 - 2. Unexposed surfaces for coated panels shall be baked-on polyester coating with .20 - .30 dry film thickness (TDF).
 - 3. Exposed and unexposed surfaces for uncoated panels shall be as shipped from the mill.
- D. Characteristics:
 - 1. Fabrication: Panels shall be factory roll-formed from the specified metal. Field rolled panels will not be allowed.
 - 2. Configuration: Interlocking flush/flat seams incorporating concealed anchor clips. Through fastened or exposed fastener systems are not acceptable.
 - 3. Panel seam legs shall be one and one half (1 ½) inch nominal concealed depth behind the panel face. Seam shall allow for expansion and contraction of panels due to thermal changes.
 - 4. Anchor clips: Clips shall be 22 gauge galvalume steel designed to allow thermal movement of the panel in each direction along the longitudinal dimension.
 - 5. Panel Width (Seam Spacing): 12" nominal.
 - 6. Panel lengths: Full length without joints to the extent as is practical.
 - 7. Profile of panel face shall have mesa's every two (2) on center continuous throughout panel which are a minimum of one and one half (1 ½) inches wide. These will absorb thermal stresses, reduce oil canning, and provide aesthetic appeal.

- E. Accessories:
 - 1. Fasteners:
 - a. Concealed fasteners: Corrosion resistant steel screws, #10 x 1" long, pancake head, Phillips drive. Use self-drilling, self-tapping for metal substrate or A-point for plywood substrate.
 - b. Exposed fasteners: Series 410 stainless steel screws or one eighth (1/8) inch diameter stainless steel waterproof rivets. All exposed fasteners shall be factory painted to match the color of the wall panels.
 - 2. Provide all miscellaneous accessories for complete installation.

2.4 ACCESSORY PRODUCTS

- A. Sealant:
 - 1. Acceptable product:
 - a. Concealed Application: Non-curing butyl sealant or equal.
 - b. Exposed Application: Garland SS sealant or equal.
 - 2. Colors: As selected by architect from sealant manufacturer's standard selection.
- B. Wall Substrate:
 - 1. Install 15/32" (minimum) thickness exterior grade plywood sheathing along wall area.
 - 2. Install 3/4" high x 24 gauge (minimum) galvanized steel during hat sections to wall structural substrate. Hat sections shall be installed perpendicular to panel seams, and shall be spaced thirty (30) inches on center (maximum) to accommodate the panel fastener spacing given in article 3.2 C.
 - 3. Install 3/4" high x 16 gauge galvanized steel zee furring sections to the wall structural substrate. Zee sections shall be installed perpendicular to panel seams, and shall be spaced thirty (30) inches on center (maximum) to accommodate to the panel anchor clip spacing given in article 3.2 C.
- C. Underlayment:
 - 1. Underlayment shall be one ply of R-Mer Seal self-adhesive Seams shall be lapped in accordance with manufacturer's recommendations.

1.5 FABRICATION

- A. Shop fabricate metal panels and flashing components to the maximum extent possible, forming metal work with clear, sharp, straight, and uniform bends and rises. Hem exposed edges of flashings.
- B. Form flashing components from full single width sheet in minimum ten (10'-0") feet sections. Provide shop fabricated, mitered corners, joined using closed end pop rivets and joint sealant.
- C. Fabricate panels and related sheet metal work in accordance with approved shop drawings and applicable standards.

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

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

3.2 PREPARATION

- A. Inspection: Examine the alignment and placement of the building structure and substrate. Correct any objectionable warp, waves or buckles in the substrate before proceeding with installation of the pre-formed metal panels.
- B. Pre-installation conference: Prior to beginning metal wall panel work, convene a pre-installation conference as specified in Part 1 of this Specification.
- C. It is understood that the ongoing operations of the Owner area of a critical nature as to leak sensitivity. Do not work on more wall area than can be restored completely watertight in one day.

3.3 INSTALLATION, GENERAL

- A. Install wall system when the atmospheric dry bulb temperature is minimum forty (40) degrees Fahrenheit and rising.
- B. Install all components of the wall system in exact accordance with the manufacturer's standard published procedures as applicable to these project conditions and substrates.

3.4 WALL PANEL INSTALLATION

- A. Comply with all details and install wall panel materials and flashings in accordance with approved Manufacturer's [details<or>shop drawings] and manufacturer's product data within specified erection tolerances.
- B. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.
- C. Limit exposed fasteners to extent indicated on shop drawings.
- D. Seal laps and joints in accordance with system manufacturer's product data.
- E. Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge panels with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.
- F. Form joints in linear sheet metal to allow for one fourth (1/4) inch minimum expansion at twenty (20'-0") feet on center maximum and eight (8'-0") feet from corners.
- G. At joints in linear sheet metal items, set sheet metal items in two (2) one fourth (1/4) inch beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.

3.5 CLEANING

- A. Clean installed work in accordance with the manufacturer's instructions.
- B. Replace damaged work than cannot be restored by normal cleaning methods.

3.6 CONSTRUCTION WASTE MANAGEMENT

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

3.7 FINAL INSPECTION

- A. At completion of installation and associated work, meet with Contractor, Architect, installer, installer of associated work, Owner, system manufacturer's representative, and other representatives directly concerned with performance of system.
- B. Inspect work and flashing of penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Notify the Owner upon completion of corrections.
- E. Following the final inspection, provide written notice of acceptance of the installation from the system manufacturer.
- F. Immediately correct leakage during construction. If the Contractor does not respond within twenty four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

END OF SECTION 07421

SECTION 07550
HOT ASPHALT MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Hot Applied 3-Ply Asphalt Roofing

1.2 REFERENCES

- A. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- B. Factory Mutual Research (FM): Roof Assembly Classifications.
- C. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- E. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- F. Warnock Hersey (WH): Fire Hazard Classifications.
- G. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- H. California Title 24 Energy Efficient Standards.

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. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

1.4 SUBMITTALS

- A. 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.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. 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 signed and sealed 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.

- D. 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.
- E. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- F. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- G. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- H. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 1. Bidder will not be allowed to change materials after the bid opening date.
 2. If alternate products are included in the bid, 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.
 3. 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.
- 4. 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.
- 5. 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 HOT APPLIED 3-PLY ASPHALT ROOFING

- A. Red Rosin Paper: Loose laid over deck prior to nailed base sheet
- B. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. HPR Glasbase:
- C. Base (Ply) Sheet: Two plies bonded to the prepared substrate with Interply Adhesive:
 - 1. HPR Glasfelt:
- D. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with interply Adhesive.
 - 1. StressPly Plus FR Mineral:
- E. Interply Adhesive: (1, 2 and 3)
 - 1. Generic Type III Asphalt:
- F. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive except for torch applied:
 - 1. StressBase 80:
- G. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive except for torch applied:
 - 1. StressPly Plus FR Mineral:
- H. Flashing Ply Adhesive:
 - 1. Generic Type III Asphalt:

PART 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.

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 INSTALLATION HOT APPLIED ROOF SYSTEM

- A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.
 - 1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.

2. Install base flashing ply to all perimeter and projection details after membrane application.
 3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 4. Install base flashing ply to all perimeter and projection details.
 5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
 2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
 3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
 4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
 5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.
- C. 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.
- D. 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.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. 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.
- G. 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 surfaces 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 hot material unless otherwise noted in these specifications. 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 sheet of flashing membrane to the substrate.
 5. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and mesh.
 6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the 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.
- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

- A. Base (Ply) Sheet:
 - 1. HPR Glasfelt: ASTM D 2178 Type IV, Asphalt saturated fiberglass felt.
 - a. Meets or Exceeds ASTM D 2178 Type IV Performance Criteria.
- B. Modified Cap (Ply) Sheet:
 - 1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
- C. Interply Adhesive:
 - 1. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
 - a. Softening Point 185 deg. F - 205 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-35 units
 - d. Ductility @ 77 deg. F 2.5 cm
- D. Flashing Base Ply:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147

- 1) Passes -40 deg. F (-40 deg. C)
- E. Flashing Ply Adhesive:
1. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
 - a. Softening Point 185 deg. F - 205 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-35 units
 - d. Ductility @ 77 deg. F 2.5 cm
- F. Surfacing:
1. Flashing Cap (Ply) Sheet:
 - a. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - 4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

END OF SECTION

SECTION 07551
TORCH MODIFIED MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Torch Applied 2-Ply Asphalt Roofing

1.2 REFERENCES

- A. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.
- B. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- C. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- D. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- E. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- F. Factory Mutual Research (FM): Roof Assembly Classifications.
- G. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- H. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- I. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- J. Warnock Hersey (WH): Fire Hazard Classifications.
- K. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- L. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- M. UL - Fire Resistance Directory.
- N. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- O. California Title 24 Energy Efficient Standards.

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 A rating

1.4 SUBMITTALS

- A. 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.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
 - C. 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.
 - D. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio based materials.
 - E. 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 signed and sealed 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.
 - F. 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.
 - G. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
 - H. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
 - I. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, 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.
 - 3. 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.
 - 4. 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.
 - 5. 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 TORCH APPLIED 2-PLY ASPHALT ROOFING

- A. Base (Ply) Sheet:
 - 1. HPR Torch Base:
- B. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate.
 - 1. StressPly IV Plus Mineral:
 - 2. HPR Torch Base:
- C. Flashing Cap (Ply) Sheet
 - 1. StressPly IV Plus Mineral:

PART 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.

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 INSTALLATION TORCH APPLIED 2-PLY ASPHALT ROOFING

- A. Base Ply: Install torch base sheet to a properly prepared substrate. Shingle in proper direction to shed water on each area of roofing.
1. Lay out the roll in the course to be followed and unroll 6 feet (1.8 m).
 2. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
 3. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
 4. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
 5. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
 6. Extend underlayment 2 inches (50 mm) beyond top edges of cants at wall and projection bases.
 7. Install base flashing ply to all perimeter and projections details.
- B. Modified Cap (Ply) Sheet: Over torch base sheet underlayment, lay out the roll in the course to be followed and unroll 6 feet (1.8 m). Stagger seams over the torch base sheet seams.
1. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
 2. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
 3. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
 4. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
- C. 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.
- D. 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.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. 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.
- G. Flashing Base Ply: Seal all 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.

1. Prepare all walls, penetrations, expansion joints, and other surfaces to be flashed with asphalt primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 2. Adhere modified flashing base to the underlying base flashing ply with specified flashing ply adhesive. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 3. Solidly adhere the entire sheet of flashing membrane to the substrate. Tops of all flashings that are not run up and over curb shall be secured through termination bar 6 inches (152 mm) and sealed at top
 4. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and fiberglass mesh.
 5. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work.
 6. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work. When using mineralized cap sheet all stripping plies type IV felt / Versiply 40 shall be installed prior to cap sheet installation.
- H. Flashing Cap Ply: Install flashing cap 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 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.
- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

- A. Base (Ply) Sheet:
 - 1. HPR Torch Base: 110 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 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) 50 mm/min. @ 23 +/- 2 deg. C MD 1,334 N XD 1,334 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%
 - d. Low Temperature Flexibility, ASTM D5147, Passes -30 deg. F (-34.4 deg. C)
- B. Modified Cap (Ply) Sheet:
 - 1. StressPly IV Plus Mineral: 195 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced rubber modified roofing membrane with a fiberglass and polyester composite scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 510 lbf XD 510 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2269 N XD 2269 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 9% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 9% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

- C. Flashing Base Ply:
1. HPR Torchbase: SBS modified, torch applied sheet material. ASTM D 6163, Type II.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 210 lbf/in XD 210 lbf/in
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6 % XD 6 %
 - 2) 50 mm/min @ 23 +/- 2 deg. C MD 6 % XD 6 %
 - d. Low Temperature Flexibility, ASTM D 5147:
 - 1) Passes -30 deg. F (-34 deg. C). Meets or Exceeds ASTM D 4601 Type II Performance Criteria.
- D. Surfacing:
1. Flashing Cap (Ply) Sheet:
 - a. StressPly IV Plus Mineral: 195 mil SBS (Styrene-Butadiene- Styrene) mineral surfaced rubber modified roofing membrane with a dual fiberglass scrim. This membrane is designed for torch applications and has a burn-off backer that indicates when the material is hot enough to be installed. Surfaced with a highly reflective Sunburst mineral.
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in CMD 225 lbf/in
 - b) 50 mm/min. @ 23 +/- 3 deg. C MD 39.0 kN/m CMD 39.0 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf CMD 300 lbf
 - b) 50 mm/min. @ 23 +/- 3 deg. C MD 1335 N CMD 1335 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 9% CMD 8%
 - b) 50 mm/min. @ 23 +/- 3 deg. C MD 9% CMD 8%
 - 4) Low Temperature Flexibility, ASTM D 5147: Passes -20 deg. F (-29 deg. C)
 - 5) Reflectivity (DNS Method) 73%

END OF SECTION

SECTION 07552
SELF ADHERING MODIFIED MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Self-Adhered 2 Ply Roofing

1.2 REFERENCES

- A. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- B. Factory Mutual Research (FM): Roof Assembly Classifications.
- C. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- E. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- F. Warnock Hersey (WH): Fire Hazard Classifications.
- G. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- H. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- I. UL - Fire Resistance Directory.

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. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.

1.4 SUBMITTALS

- A. 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.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. 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 signed and sealed 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.

- D. 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.
- E. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- F. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- G. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, 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.
 - 3. 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.
- 4. 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.
 - 5. 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 SELF ADHERED ROOF SYSTEM

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. HPR SA FR Base Sheet:
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with self-adhesive.
 - 1. HPR SA FR Base Sheet:
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with self-adhesive.
 - 1. StressPly SA FR Mineral:
- D. Interply Adhesive: Use over approved cover boards or wood decks for base sheet only
 - 1. SA Primer:
- E. Flashing Base Ply: One ply bonded to the prepared substrate.
 - 1. HPR SA FR Base Sheet:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate.
 - 1. StressPly SA FR Mineral:
- G. Flashing Ply Adhesive:
 - 1. SA Primer: Over approved cover boards only.

PART 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. Deck Preparation for Self-Adhered Roof System: Insulation shall be installed per manufacturer requirements. Sweep or blow away any dust, dirt or sand particles that could interfere with adhesion to approved substrate Georgia Pacific (GP) DensDeck Prime, DensDeck DuraGuard, or USG Securrock and prime with self-adhering primer at the specified coverage rate.

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 INSTALLATION SELF ADHERED ROOF SYSTEM

- A. Optional Nailable Base Sheet: Install base sheet nailed to the substrate with the appropriate fastener and fastening pattern determined from your wind uplift calculation.

- B. Base Ply: Prior to installation sweep or blow away any dust, dirt or sand particles, on the surface that could interfere with adhesion.
1. Prime the roof cover board at the recommended coverage rate with SA Primer at a rate of 0.50 gal per 100 sq.ft. Allow the primer to dry before installing the base sheet but it should be tacky for the base sheet application.
 2. Start HPR SA FR Base Sheet application at the low point of the roof with appropriate roll width to offset side laps 18 inches (457 mm) from side laps of base sheet. Install flush to roof edge if over base sheet, otherwise turn the HPR SA FR Base Sheet over the fascia minimum 2 inches (50 mm) and nail 9 inches (230 mm) o.c. At perimeter flashing extend the HPR SA FR Base Sheet up a minimum of 8 inches (203 mm). Design so that side laps are against the flow of water.
 3. Fold membrane back halfway lengthwise to remove the split release film. Press membrane securely into place, and repeat with the opposite half of the membrane. Use a heavy, weighted roller over entire surface of the HPR SA FR Base Sheet membrane to secure membrane. Work outwards to eliminate voids. When working with full rolls on large roofs, leave the membrane in position and remove the split release film from underneath the membrane.
 4. Overlap side laps of subsequent HPR SA FR Base Sheet membrane lengths 4 inches (100 mm) and end laps 8 inches (203 mm). Offset (stagger) end laps minimum 3 feet (0.9 m). Cut end laps at opposing diagonal corners at a 45 degree angle approximately 3 inches (76 mm) from the corners to minimize "T"- seams. Apply a bead or small trowel dab (quarter size) of Flashing Bond or Garla-Flex at the edge of the angled cut to avoid a capillary.
 5. Use of a hand-held hot air gun at joint area prior to rolling membrane to maximize adhesion. Apply a bead of Flashing Bond or Garla-Flex, at all HPR SA FR Base Sheet side and end laps to eliminate a capillary.
 6. Use a heavy, weighted roller over the entire surface of HPR SA FR Base Sheet to secure it in place and prevent voids, working outward from center of sheet.
 7. Repeat the above steps to properly build 1 to 2 plies, as specified, of HPR SA FR Base Sheet.
 8. Don't leave the installed HPR SA FR Base Sheet exposed to the weather; cover with StressPly SA FR Mineral cap sheet the same day.
- C. Modified Cap Ply(s): Prior to installation sweep or blow away any dust, dirt or sand particles, on the HPR SA FR Base Sheet that could interfere with adhesion.
1. Install StressPly SA FR Mineral starting at the low point of the roof with an appropriate roll width to offset sidelaps from the underlying membrane a minimum of 18 inches (457 mm). Work with manageable lengths for proper handling. Position with salvage edge release strip at high side of roof. Install in shingle fashion, with no laps against the flow of water.
 2. Once positioned, lift and fold back lengthwise the lower half of the membrane, remove the split release film, and press firmly into place. Repeat with the other (high side of the roof) half of the membrane. Follow the same layout and split release film procedures as for HPR SA FR Base Sheet, but overlap sidelaps 4 inches (100 mm) and endlaps 8 inches (203 mm).
 3. Use a heavy, weighted roller over the entire surface of the StressPly SA FR Mineral sheet to secure it in place and prevent voids, working outward from the center of the sheet.
 4. As subsequent membrane lengths are installed, remove the selvage edge release strip just prior to overlapping to keep the adhesive area protected and clean. Cut endlaps at opposing diagonal corners at a 45 degree angle approximately 4 inches (100 mm) from the corners to minimize "T" seams. Use Flashing Bond or Garla-Flex trowel grade, over the full 8 inch (200 mm) width of each endlap prior to overlapping. Apply a uniform 1/8 to 1/4 inch (3 to 6 mm) troweling of the Flashing Bond or Garla-Flex the full width of the endlaps to the underlying membrane; then install the overlapping sheet.

5. Always apply Flashing Bond or Garla-Flex the width of any overlap when applying the StressPly SA FR Mineral cap over another mineral surface such as the StressPly SA FR Mineral endlap.
 6. Install HPR SA FR Base Sheet and StressPly SA FR Mineral at vertical and other flashing over the already installed StressPly SA FR Mineral field plies.
- D. 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 in accordance with Garland's recommendations.
- E. 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 in accordance with Garland's recommendations.
- F. Termination Bar: Provide 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.
- G. Flashing Base Ply: At all vertical and other flashing details, install HPR SA FR Base Sheet and StressPly SA FR Mineral over the already installed StressPly SA FR Mineral field plies.
1. Prime the horizontal surface with SA Primer at a rate of 0.5 gal per 100 sq.ft. and allowed to dry.
 2. Over installed StressPly SA FR Mineral field plies apply a 3 foot (0.9 m) wide HPR SA FR Base Sheet extending a minimum of 10 inches (254 mm) onto the field of the roof. Apply a uniform 1/8 to 1/4 inch (3 to 6 mm) thick troweling of Flashing Bond or Garla-Flex, on to the existing StressPly SA FR Mineral field cap.
 3. If adhesion is not sufficient on the laps apply Flashing Bond or Garla-Flex at a 1/8 to 1/4 inch (3-6 mm) thick to fully seal laps before application of StressPly SA FR Mineral.
 4. Before installing StressPly SA FR Mineral flashing ply to mineral surfaced field ply, apply Flashing Bond or Garla-Flex, wherever the membrane overlaps onto mineral surfacing. Proceed with StressPly SA FR Mineral cap sheet installation. Apply a 3 foot (0.9 m) wide StressPly SA FR mineral extending a minimum of 10 inches (254 mm) onto the field of the roof, being sure to cover the base ply.
 5. Once the membrane has had a chance to bond, check all laps and joints for full adhesion. If the membrane can be lifted at any area it is not properly adhered. Use a seam probing tool to check for small voids at laps. If necessary, use appropriate hand-held hot air welding tool and seam roller to seal small un-bonded areas.
- H. Flashing Cap Ply: Apply as specified for Flashing Base Ply in strict conformance with the manufacturer's recommended procedures.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

- A. Surfacing:
 - 1. Flashing Cap (Ply) Sheet:
 - a. StressPly SA FR Mineral: 140 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced self-adhered, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 3.5% XD 3.5%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 3.5% XD 3.5%
 - 4) Low Temperature Flexibility, ASTM D 5147, Passes -15 deg. F (-26 deg. C)

END OF SECTION

SECTION 07553
TWO PLY HOT ASPHALT MODIFIED ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Hot Applied 2-Ply Asphalt Roofing

1.2 REFERENCES

- A. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- B. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- C. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- D. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- E. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- F. Factory Mutual Research (FM): Roof Assembly Classifications.
- G. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- H. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- I. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- J. Warnock Hersey (WH): Fire Hazard Classifications.
- K. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- L. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- M. UL - Fire Resistance Directory.
- N. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- O. California Title 24 Energy Efficient Standards.

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 A rating for roof slopes

1.4 SUBMITTALS

- A. 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.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. 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 signed and sealed 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.
- D. 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.
- E. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- F. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- G. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- H. 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.
- I. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, 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.
 - 3. 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.
 - 4. 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.
 - 5. 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 HOT APPLIED 2-PLY ASPHALT ROOFING - STRESSPLY, OPTIMAX, OR VERSIPLY

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. HPR Glasbase:
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive.
 - 1. StressPly Plus FR Mineral:
- D. Interply Adhesive: (1 and 2)
 - 1. Generic Type III Asphalt:
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive: except torch sheet.
 - 1. VersiPly 40:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive: except torch sheet.
 - 1. StressPly Plus FR Mineral:
- G. Flashing Ply Adhesive:

1. Generic Type IV Asphalt:

PART 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.

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 INSTALLATION HOT APPLIED ROOF SYSTEM

- A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.
 - 1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.
 - 2. Install base flashing ply to all perimeter and projection details after membrane application.
 - 3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 - 4. Install base flashing ply to all perimeter and projection details.
 - 5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
 - 1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
 - 2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
 - 3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
 - 4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
 - 5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.
- C. 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.
- D. 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.

- E. 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.
- F. 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.
- G. 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 surfaces 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 hot material unless otherwise noted in these specifications. 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 sheet of flashing membrane to the substrate.
 - 5. Seal all vertical laps of flashing membrane with a three-course application of trowel-grade mastic and mesh.
 - 6. Coordinate counter flashing, cap flashings, expansion joints, and similar work with modified bitumen roofing work as specified.
 - 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
- H. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the 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.
- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 - 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

- A. Base (Ply) Sheet:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)
- B. Modified Cap (Ply) Sheet:
 - 1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - b. Tear Strength, ASTM D 5147

- 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
- C. Interply Adhesive:
- 1. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
 - a. Softening Point 185 deg. F - 205 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-35 units
 - d. Ductility @ 77 deg. F 2.5 cm
- D. Flashing Base Ply:
- 1. VersiPly 40: 40 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual fiberglass reinforced scrim.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 215 lbf/in XD 215 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 37.5 kN/m XD 37.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 275 lbf XD 275 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1223 N XD 1223 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - d. Low Temperature Flexibility, ASTM D 5147
 - 1) Passes -30 deg. F (-34 deg. C). Meets or Exceeds ASTM D 4601 Type II Performance Criteria.
- E. Flashing Ply Adhesive:
- 1. Generic Type IV Asphalt: Hot Bitumen, ASTM D 312, Type IV special steep asphalt having the following characteristics:
 - a. Softening Point 210 deg. F - 225 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-25 units
 - d. Ductility @ 77 deg. F 1.5 cm
- F. Surfacing:
- 1. Flashing Cap (Ply) Sheet:
 - a. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - 4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

END OF SECTION

SECTION 07554
COLD PROCESS MODIFIED MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cold Applied 2-Ply Asphalt Roofing

1.2 REFERENCES

- A. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- B. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- C. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- D. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- E. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- F. Factory Mutual Research (FM): Roof Assembly Classifications.
- G. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- H. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- I. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- J. Warnock Hersey (WH): Fire Hazard Classifications.
- K. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- L. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- M. UL - Fire Resistance Directory.
- N. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- O. California Title 24 Energy Efficient Standards.

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 A rating for roof slopes

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 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 signed and sealed 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. 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.
- F. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- G. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- H. 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.
- I. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, 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.
 - 3. 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.
 - 4. 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.
 - 5. 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 - STRESSPLY, OPTIMAX, OR VERSIPLY

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. HPR Glasbase
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly Plus FR Mineral:
- D. Interply Adhesive: (1 and 2)
 - 1. Weatherking Plus WC:
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressBase 80:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 - 1. StressPly Plus FR Mineral:
- G. Flashing Ply Adhesive:
 - 1. Weatherking Flashing Adhesive:

PART 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.

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 INSTALLATION 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 modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plys specified. 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 base layers 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. Care should be taken 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. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
 6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
- C. 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.
- D. 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. Nailers 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.
- E. 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.
- F. 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.
- G. 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. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
 6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 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. 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.

- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

- A. Base (Ply) Sheet:
 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in./min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147

- 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
- 2) 50mm/min@ -17.78 +/- 2 deg. C MD 4 % XD 4 %
- d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

B. Thermoplastic/Modified Cap (Ply) Sheet:

1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

C. Interply Adhesive:

1. Weatherking Plus WC: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 - a. Non-Volatile Content ASTM D 4479 78%
 - b. Density ASTM D1475 9.0 lbs./gal.
 - c. Viscosity Stormer ASTM D562 900-1100 grams
 - d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
 - e. Slope: up to 2:12
 - f. V.O.C. ASTM D 3960 Less than 250 g/l
 - g. Flash Point ASTM D 93 105 deg. F
 - h. Slope maximum 1:12

D. Flashing Base Ply:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147
 - 1) Passes -40 deg. F (-40 deg. C)

E. Flashing Ply Adhesive:

1. Weatherking Flashing Adhesive: Brush grade flashing adhesive.
 - a. Non-Volatile Content ASTM D 4479 70 min.
 - b. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
 - c. Flash Point ASTM D 93 100 deg. F (37 deg. C)

F. Surfacing:

1. Flashing Cap (Ply) Sheet:
 - a. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and

polyester composite scrim. ASTM D 6162, Type III Grade G

- 1) Tensile Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
- 2) Tear Strength, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
- 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
- 4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

END OF SECTION

SECTION 07555
THERMOPLASTIC HYBRID ROOF SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cold Applied 2-Ply Thermoplastic Hybrid Roof System

1.2 REFERENCES

- A. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- B. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- C. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- D. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- E. ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.
- F. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
- G. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- H. Factory Mutual Research (FM): Roof Assembly Classifications.
- I. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- J. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- K. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- L. Warnock Hersey (WH): Fire Hazard Classifications.
- M. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- N. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- O. UL - Fire Resistance Directory.
- P. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- Q. California Title 24 Energy Efficient Standards.

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 A rating

1.4 SUBMITTALS

- A. 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.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. 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 signed and sealed 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.
- D. 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.
- E. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio based materials.
- F. 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.
- G. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- H. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147. Testing must be performed at 77 deg. F. Tests at 0 deg. F will not be considered.
- I. 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.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- 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. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. 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 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.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770
- B. The Products specified are intended and the Standard of Quality for the products required for this project. If other products are proposed the bidder must disclose in the bid the manufacturer and the products that they intend to use on the Project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 - 1. Bidder will not be allowed to change materials after the bid opening date.
 - 2. If alternate products are included in the bid, 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.
 - 3. 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.
 - 4. 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.
 - 5. 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 THERMOPLASTIC HYBRID ROOF SYSTEM - KEE-Stone FB 60

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 - 1. VersiPly 40:
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate:
 - 1. HPR Torch Base:
- C. Thermoplastic Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive (2):
 - 1. KEE-Stone FB 60:
- D. Interply Adhesive: (1)
 - 1. torch sheets only.

- E. Interply Adhesive: (2)
 - 1. KEE-Lock Foam
- F. Flashing Base Ply: One ply bonded to the prepared substrate:
 - 1. HPR Torch Base:
- G. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Flashing Ply Adhesive:
 - 1. KEE-Stone FB 60 Flashing.

PART 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.

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 INSTALLATION ROOF SYSTEM

- A. Base Ply: Install torch base sheet to a properly prepared substrate. Shingle in proper direction to shed water on each area of roofing.
 1. Lay out the roll in the course to be followed and unroll 6 feet (1.8 m).
 2. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
 3. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
 4. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
 5. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
 6. Extend underlayment 2 inches (50 mm) beyond top edges of cants at wall and projection bases.
 7. Install base flashing ply to all perimeter and projections details.
- B. Thermoplastic Cap Ply: Allow plies 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.
 1. All field seams exceeding 10 feet in length shall be welded with an approved automatic welder.
 2. 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.
 3. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
 4. 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.
 5. 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.
 6. 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.

7. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
- C. 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.
- D. 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.
- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. 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.
- G. 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. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
 6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 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. 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.
- I. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.5 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.

3.6 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.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations 3 days per week. 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 Sales 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 Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 4. Provide a final report from the Sales Representative, certifying that the roofing system

has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.8 SCHEDULES

A. Base (Ply) Sheet:

1. HPR Torch Base: 110 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 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) 50 mm/min. @ 23 +/- 2 deg. C MD 1,334 N XD 1,334 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%
 - d. Low Temperature Flexibility, ASTM D5147, Passes -30 deg. F (-34.4 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:

1. KEE-Lock Foam: Dual component, single bead (ribbon 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 @ -70deg. F (-56.7deg. C)

D. Surfacing:

1. Flashing Cap (Ply) Sheet:
 - a. KEE-Stone FB 60 Flashing: 60 mil thermoplastic, ketone ethylene ester (KEE) roofing membrane with polyester scrim. ASTM D 6754.
 - 1) Breaking Strength, ASTM D 751, Proc. B, strip
 - a) 378 lbf
 - 2) Tear Strength ASTM D 751
 - a) 120 lbf. minimum.
 - 3) Elongation at Break (%), ASTM D 751, Proc. B, Strip
 - a) 40.0%

END OF SECTION

SECTION 07563
FLUID APPLIED ROOFING RESTORATION

PART 1 GENERAL

1.1 GENERAL INFORMATION

- A. Provide all labor, equipment, and materials to install roof restoration products over the properly prepared existing roof substrate

1.2 SCOPE OF WORK

- A. Pressure wash roofing membrane, allow to dry. Properly dispose of all debris.
- B. Reinforce all seams and details with 6" wide UniBond ST tape
- C. Install white silicone restoration coating – Cool-Sil SG - at 2.5 gallons per 100 square ft. over the entire roof field surface (including penetrations). Allow to dry.
- D. Apply at 1.0 gallons per 100 square feet of Cool Sil SG over the entire roof surface, immediately broadcast 30lbs per square of T24 minerals into wet coating while wet and immediately back roll to set. After curing, clean up all loose minerals and dispose of.

1.3 SUBMITTALS

- A. Product Data: Provide manufacturer's technical product data for each type of roofing product specified. Include data substantiating that materials comply with specified requirements.
- B. Documentation of Existing Conditions: Document existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, condition of conduits, any existing damage to equipment on roof, etc that might be misconstrued as having been damaged by roofing operations. Submit before work begins. Use digital photographs and video.
- C. Provide a copy of the 10 year warranty.
- D. Provide a letter from the coating manufacturer stating that they will provide a full time employee of their company to inspect the roof during the project a minimum of 3 days per week at no additional cost to the contractor or the Water District and that if more inspections are requested or required that they will also be provided at no additional charges.
- E. Provide a letter from the manufacturer stating that roofing contractor is certified to install this system and will be eligible for the warranty at the close of the project.
- F. Provide a detailed schedule showing when each building area will be started and completed.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.
- C. 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.

- D. 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.
- E. 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 Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer
- F. Installer must protect their equipment, trucks, ladder access, and any of their storage areas from access from public on site for various reasons.
- G. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work and at any time roofing work is in progress. Maintain proper supervision of workmen. Maintain a copy of the specifications in the possession of the Supervisor/Foremen and on the Site at all times

1.5 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including Owner and roofing system manufacturer's representative.
- C. Objectives include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
 - 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
 - 5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
 - 8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.6 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. No wet or damaged materials will

be used in the application.

- D. Avoid stockpiling of materials on roofs without first obtaining acceptance from the manufacturer's representative.
- E. Storage temperatures should be between 60°F to 80°F (15.6° to 26.7°C) and not exceed 110°F (43.3°C). Indoor ventilated storage or use of temp-controlled containers is required. Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight. Keep materials away from open flame or welding sparks. Contractor is responsible for any charges (including freight and tax) to replace any material that is damaged due to improper storing conditions.
- F. Contractor is responsible for safe storage of materials. This includes environmental conditions and security conditions such as theft and vandalism.

1.7 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. Weather Condition Limitations: Do not apply roofing system during inclement weather or when precipitation is expected.
- 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 during same day.
- E. When applying materials with spray equipment, take precautions to prevent over spray and/or solvents from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
 - 1. Close air intakes into the building.
 - 2. Have a dry chemical fire extinguisher available at the jobsite.
 - 3. Post and enforce "No Smoking" signs.
- F. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.
- G. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.
- H. Take precautions to ensure that materials do not freeze.
- I. Minimum temperature for application is 50 degrees F (10 degrees C) and rising

1.8 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed limited labor and materials Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
 - 1. Warranty Period:
 - a. Ten (10) years

- A. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
 - 1. Warranty Period:
 - a. 5 years from date of acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company or District pre-approved equal. Local contact: Steve Lampman 949-322-1770

2.2 ROOF RESTORATION SYSTEM FOR MINERAL MODIFIED SURFACE ROOFS

- A. Cool-Sil HB System:
 - 1. Coating: Cool-Sil SG (White)
 - 2. Repairs: Cool-Sil FG (White)Repairs and reinforcement: Uni-Bond ST 6"

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 ROOF PREPARATION AND REPAIR

- A. General: All necessary field and flashing repairs must be done according to good construction practices.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Repair all defects such as deteriorated roof decks; replace saturated insulation board, replace loose or brittle membrane or membrane flashings. Verify that existing conditions meet the following requirements:
 - 1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
- D. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.
- E. Clean and seal and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.
- F. Confirm local water run-off ordinances and restrictions prior to cleaning roof. Clean the entire roof surface by removing all dirt, algae, mold, moss, paint, oil, talc, rust or other foreign substance. Use a bio-degradable cleaner like Simple Green Oxy Solve when necessary and warm water. Scrub heavily soiled areas with a brush. Power wash roof thoroughly with an industrial surface cleaner equipped with one piece balanced spray rotating jets for streak

free close contact cleaning. Rinse with fresh water to completely remove all residuals. Allow roof to dry thoroughly before continuing.

- G. Repair existing roof membrane as necessary to provide a sound substrate for the fluid-applied membrane. All surface defects (cracks, blisters, tears) must be repaired using Cool Sil HB and polyester in a three course manner, 2.5 gallons per coat.

3.3 INSTALLATION

A. General Installation Requirements:

1. Install in accordance with manufacturer's instructions. Apply to minimum coating thickness required by the manufacturer.
2. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
3. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
4. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore work damaged by installation of the roofing system.
5. All primers must be top coated within 24 hours of application. Re-prime if more time passes after priming.
6. Keep roofing materials dry during application.
7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.

B. Mineral Modified Roof Restoration: Renovation work includes:

1. Surface preparation: Remove dirt, and debris.
 - a. Previously coated roofs with well-adhered polyurethane or polyurea coating surfacing must be solvent-wiped with acetone after cleaning to reactivate surface for overcoating.
2. Partially Reinforced System:
 - a. Application of tape reinforcement (UniBond ST)
 - 1) Always begin with flashing laps and details.
 - 2) Remove the clear release liner from the back in workable sections
 - 3) Center 6 inch wide UniBond ST over the middle of the lap.
 - 4) Use care to install the tape uniformly. Do not stretch or cause air pockets, wrinkles or fishmouths.
 - 5) Apply pressure to tape starting at the center and work toward outside edge with a steel roller to activate the bonding process.
 - 6) Inspect the tape to ensure that it is properly installed. Verify edges are tightly fixed to surface. If any discrepancies are present, repair before the coating is applied.
 - 7) Saturate the tape with coating.
3. Apply at 2.5 gallons per 100 SF of Cool Sil HB over the entire roof surface, back roll, let dry
4. Apply at 1.0 gallons per 100 SF of Cool Sil HB over the entire roof surface, immediately broadcast 30lbs per square of T24 minerals into wet coating while wet and immediately back roll to set.
5. Liquid Flashings:
 - a. All flashings are coated in the same manner as the field prior to field application.
 - b. Vertical liquid flashings shall run a minimum of 4" onto the horizontal surface

3.4 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.

3.5 PROTECTION

- A. As needed, 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.

3.6 FIELD QUALITY CONTROL

- A. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system at a minimum of 3 days per week.
- B. Correct defects or irregularities discovered during field inspection.

3.7 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Owner, installer, roofing system manufacturer's representative and others directly concerned with performance of roofing system.
- B. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Advise Owner upon completion of corrections.
- E. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.8 PROTECTION

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

3.9 SCHEDULES

- A. Reinforcement:
 - 1. UniBond ST: Fatigue resistant, polyester-faced adhesive tape.
 - a. Tensile Strength 4500 psi.
 - b. Elongation, 500%
 - c. Low Temperature Flexibility, -70 degrees F (-56.6 degrees C).
 - d. Service Temperature, -30 to 200 degrees F (-34.4 to 93.3 degrees C).
 - e. Permeance ASTM 96b, .001 perms.
 - f. Adhesion Greater than 20 lbs./in.

- B. Coatings:
 - 1. Coating: Cool-Sil White Silicone Coating Highly reflective, multi- purpose, single-component 100% silicone, liquid waterproofing membrane.
 - a. Tensile Strength: ASTM D 412, 350 psi
 - b. Elongation: ASTM D 412, 174%
 - c. Flash Point: ASTM D 93, 141 degrees F min. (60.6 degrees C)
 - d. Solids Content: ASTM D 2369, Typical 95%
 - e. VOC: <50 g/l
 - f. Reflectance: 0.89
 - g. Emittance: 0.90
 - h. SRI: 113
- C. Liquid Flashings
 - 1. Coating: Cool-Sil FG: Highly reflective multi- purpose, silicone, liquid sealer..
 - a. Tensile Strength: ASTM D 412, 130 psi
 - b. Elongation: ASTM D 412, 275%
 - c. Solids Content: ASTM D 2369, Typical 95%
 - d. VOC: <50 g/l
- D. Sealant
 - 1. Sealant: All-Sil: Low modulus, high extension/compression and excellent adhesion to most building materials
 - a. Tensile Strength: ASTM D 412, 130 psi
 - b. Elongation: ASTM D 412, 275%
 - c. Solids Content: ASTM D 2369, Typical 95%
 - d. VOC: <50 g/l

END OF SECTION

RENEWAL CLAUSE

If mutually agreeable, the District reserves the right to consider the extension of this contract each year up to five (5) years. Time of such extension is to begin the day after the end of the initial term of this contract and will end one full calendar year thereafter. This initial term of the contract will be one (1) year commencing July 1, 2024 and continuing in full force and effect through June 30, 2025, with an option to extend the by mutual written agreement between the successful bidder and the District for four (4) twelve-month (12-month) increments for an optional period not to exceed forty-eight (48) months. In no event will the contract, including extensions, exceed sixty (60) months. Quoted prices must stay in effect for one (1) year after award of bid. The District may grant, upon written request, a price adjustment to compensate for inflation; this adjustment must be requested prior to April 30th of each year for the upcoming renewal year. The adjustment will be effective upon renewal of the contract and shall not exceed the percentage of change in the Consumer Price Index (CPI) for the Los Angeles-Long Beach-Anaheim areas for the period ending March 31st of the given contract renewal. Factors that would influence the District in exercising this option would be satisfactory service being rendered by the holder of the contract and any increase in price caused by such extension to be a nominal amount and not excessive as measured by local market conditions.

Bidder to indicate in space provided if it would accept option to renew for the following periods:

First Option July 1, 2025 through June 30, 2026 Yes _____ No _____

Bidder and District will discuss and negotiate any price increase if the contract were to be extended.

Second Option July 1, 2026 through June 30, 2027 Yes _____ No _____

Bidder and District will discuss and negotiate any price increase if the contract were to be extended.

Third Option July 1, 2027 through June 30, 2028 Yes _____ No _____

Bidder and District will discuss and negotiate any price increase if the contract were to be extended.

Fourth Option July 1, 2028 through June 30, 2029 Yes _____ No _____

Bidder and District will discuss and negotiate any price increase if the contract were to be extended.

Hypothetical Project (A) Basis of Award

Project: Hot Asphalt Roof

The building is 60 feet wide, 200 feet long, and 18' high.

The existing hot asphalt roof is over a wood deck and consists of a rosin paper, nailed base sheet, two plies of felts, and cap sheet with no gravel or insulation.

There are 8" high base flashings with a 4" counterflashing installed into a reglet around the entire perimeter, there is stucco above the reglet, and a 10" wide coping cap on top of the wall.

There are 7 pipe jacks, 2" in diameter that will require new liquid flashings.

There are 7 pipe jacks, 3" in diameter that will require new liquid flashings.

There are 7 pipe jacks, 4" in diameter that will require new liquid flashings.

There are 4 skylights on curbs 8" high that are 4' x 4' each.

There are eleven skylights on curbs 8" high that are 4' x 4' each.

¼" per ft tapered insulation will need to be mechanically attached in the following depths and square footages:

1,000 sq ft of 0-6"

1,000 sq ft of 6-9"

1,000 sq ft of 9-12"

Install ¼" DensDeck Prime over insulation and Insul Lock HR insulation adhesive over the top of all 3,000 sq ft of tapered insulation.

There are four (4) cast iron internal drains with four (4) inch pipes.

Tear off roof down to the deck

Install rosin paper, nail base sheet, and install two plies of type IV felts and capsheet in hot asphalt per 07550

Install new base flashings around perimeter and around skylight curbs.

Install 4 new cast iron drains and sump them 6" down into the deck.

New .040 alum Kynar reglet mounted counterflashing and coping cap to be installed.

All pipe jacks will incorporate liquid flashings.

Powerwash roof and coat with 3 gallons of Pyramic Title 24 coating. No asbestos containing materials will be present.

Replace all skylights with new double dome skylights.

All sundry items to be included in price (caulking, primer, nails, asphalt etc.)

Sump all drains and replace drain bowl assembly.

Hypothetical Project (A) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Qty.	Unit Bid Cost	Amount Used	Cost
108	Provide labor and material for demolition of existing built-up roof system up to 1 roof with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.		12,000 sq ft	
157	Provide labor and materials for installation of new roof system IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.		12,000 sq ft	
158	Provide labor and materials for installation of new roof system around a 8" HIGH CURB IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		712 LF	
182	Provide labor and materials for installation of 1/4" DensDeck Prime over insulation in Insul Lock HR insulation adhesive. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.		3,000 sq ft	
194	Provide labor and materials to TO SUMP AN EXISTING CAST IRON DRAIN ASSEMBLY IN PLYWOOD DECK. Sump to lower drain assembly 6". Sump to be built using 2"x6" framing with plywood bottom to match existing plywood deck thickness and style and built per current code. Price to include replacement of drain bowl assembly and to be done during a reroof. Roofs up to 25'-0" in height.	Each.		4 EA	
200	Provide labor and materials for installation of ALUMINUM COPING - 10" wide, 4" inside and outside face, .040 ALUM, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		520 LF	
237	Provide labor and materials TO INSTALL 4" .040 ALUMINUM REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.		520 LF	
251	Provide labor and materials for powerwashing and installation of Pyramic TITLE 24 WHITE COATING over roof at 3 gallons per sq (2 coats, 1.5 gallons per coat). Contractor shall include legal disposal of all excess materials.	OVER 10,000 S.F.		12,584 sq ft	
366	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 2" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		7 Ea	
367	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 3" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		7 EA	
368	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 4" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		7 EA	
376	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 0-6". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.		1,000 sq ft	
377	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 6-9". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.		1,000 sq ft	
378	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 9-12". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.		1,000 sq ft	
382	Provide labor and materials to install 4' x 4' double dome skylight. Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities of 1-10; Each		4 EA	
385	Provide labor and materials to install 4' x 8' double dome skylight. Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities greater than 10; Each		11 EA	

Total \$ _____

Hypothetical Project (B) Basis of Award

Project: Torch Applied Roof

The building is 100 feet wide, 150 feet long, and 18' high.

The existing hot asphalt roof is over a metal deck, has 3" of polyisocyanurate insulation with a ½" wood fiber coverboard and consists of four plies of felts, with a flood coat and gravel surface.

There are 8" high base flashings with a 4" surface mounted counterflashing installed onto a CMU wall around the entire perimeter, and a 8" wide coping cap on top of the wall.

There are 10 pipe jacks, 2" in diameter that will require new flashings

There are 10 pipe jacks, 3" in diameter that will require new flashings

There are 10 pipe jacks, 4" in diameter that will require new flashings

There are ten (10) cast iron internal drains with three (3) inch pipes.

There are 4 downdraft HVAC units on curbs 8" high that are 4' x 4' each.

There is a 3"x4" roof hatch

Tear off roof and coverboard, leaving insulation in place

Install new ¼" DensDeck Prime and screw into metal deck

Install a new two ply torch applied modified roof system per 07551

Install new base flashings around perimeter and around HVAC curbs

Install new cast iron drains

Install a new roof hatch

Install new .040 alum Kynar surface mounted counterflashing and coping cap to be installed.

All pipe jacks will incorporate new liquid flashings

Coat roofs with 2 gallons of White Star Title 24 coating and embed 300 lbs per square of 5/8" Title 24 bright white gravel into the wet coating. Do not power wash.

No asbestos containing materials will be present.

All sundry items to be included in price (caulking, primer, nails, asphalt etc.)

Hypothetical Project (B) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)	Amount Used	Cost
1	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.		15,000	
161	Provide labor and materials for installation of new roof system. 2 ply TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.		15,000	
162	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		576 LF	
179	Provide labor and materials for installation and mechanical attachment of 1/4" DensDeck Prime over metal deck or wood deck . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.		15,000	
191	Provide labor and materials for installation of NEW 3" CAST IRON DRAIN including clamp rings and covers during a reroof . Contractor shall include legal disposal of all excess materials. Roofs up to 25' in height.	Each.		10	
199	Provide labor and materials for installation of ALUMINUM COPING - 8" wide, 4" inside and outside face, .040 ALUM, kynar factory finish with continuous outside cleat . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		500	
221	Provide labor and materials TO INSTALL NEW 3'0" x 4'0" ROOF HATCH finished in Federal Safety Red Powder Coat to replace an existing hatch. Price does not include roofing hatch into place. Roofs up to 25'-0" in height.	Each		1	
237	Provide labor and materials TO INSTALL 4" .040 ALUMINUM SURFACEMOUNT COUNTERFLASHING, factory Kynar painted . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.		500	
257	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 300 lbs per square of 5/8" Title 24 bright gravel embedded into wet coating. Contractor shall include legal disposal of all excess materials.	OVER 10,000 S.F.		15,000	
366	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 2" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		10	
367	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 3" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		10	
368	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 4" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each		10	

Total \$ _____

Hypothetical Project (C) Basis of Award

Project: Standing Seam Metal Roof

The building is 60 feet long at on the rake sides and 100 feet long at the ridge and eave. The building shall have a wood deck with 1:12 slope all in one direction. The existing roof is one asphalt shingle with 30lb felt underlayment. No asbestos containing materials will be present. All sundry items to be included in price. Project shall include tearing the roof off down to the wood deck. Install one layer of R-Mer Seal self-adhering underlayment over the entire roof surface, and then install new R-Mer Span Standing Seam roofing system per section 07411.

Hypothetical Project (C) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)	Amount Used	Cost
137	Provide labor and material for removal of up to 1 asphalt shingle roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.		6,000	
281	Provide labor and materials for installation of one layer of self adhering R-MER SEAL SELF ADHERING UNDERLAYMENT BASE SHEET . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.		6,000	
295	Provide labor and materials for installation of R-MER SPAN METAL ROOFING SYSTEM PER SECTION 07411 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.		6,000	
282	Provide labor and materials TO INSTALL R-MER SPAN RIDGE ASSEMBLY PER 07411 Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		100	
301	Provide labor and materials TO INSTALL R-MER SPAN RAKE ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		120	
302	Provide labor and materials TO INSTALL R-MER SPAN EAVE ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		100	

Total \$ _____

Hypothetical Project (D) Basis of Award

Project: Shingle Roof

The building is 40 feet wide and 400 feet long. The building shall have a wood deck with 2:12 slope all in one direction. The existing roof is two asphalt shingle roofs installed. No asbestos containing materials will be present. All sundry items to be included in price. Project shall include tearing the roof off down to the wood deck.

Install new asphalt "Timberline HD" lifetime dimensional shingles with underlayment

Install a 4" 24ga kynar finish edge metal around all four sides of the roof

Install 400' of 22 ga box gutters

Install ten (10) four inch round schedule 40 downspouts that are welded, galvanized, primed, and painted and are 14' tall each.

There is a 2" conduit on the roof that will require 67 new Dura-Blok supports.

There are seven 3" vent pipes that will require ZinkJak pipe flashings.

There are four 4" vent pipes that will require ZinkJak pipe flashings.

Hypothetical Project (D) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)	Amount Used	Cost
141	Provide labor and material for removal of up to 2 asphalt shingle roofs including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.		16,000	
188	Provide labor and materials for installation of 3" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.		7	
189	Provide labor and materials for installation of 4" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.		4	
207	Provide labor and materials for installation of 4" DRIP EDGE 24 gauge metal, 24 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft.		880	
211	Provide labor and materials for installation of ROOF BOX GUTTERS 22 GA, 16" stretch out, Kynar factory finish. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft., Min 100 l.f.		400	
214	Provide labor and materials for installation of METAL ROOF DOWN SPOUTS SCHED. 40 - 4" round. Contractor to weld, galvanize, prime and paint prior to installation. Shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.		140	
217	Provide labor and materials for installation of Dura-Blok-4"(H) X 6" (W)X 9.6"(L). Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each		67	
316	Provide labor and materials for installation of ASPHALT ROOF SHINGLES "TIMBERLINE HD" LIFETIME DIMENSIONAL. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	OVER-10,000 S.F.		16,000	

Total \$ _____

Hypothetical Project (E) Basis of Award

Project: Restoration System

The building is 200 feet wide and 100 feet long.
Existing roof is a built up mineral surface roof

Powerwash entire roof

Do 100' of torch repairs with 18" wide capsheet

Do 100' of torch repairs with 36" capsheet

Install Cool Sil Bleed Blocker primer over roof surface at 1 gallon per square

Install 4000 lineal ft of 6" wide UniBond ST seam tape on all roof seams

Install Cool Sil at 4 gallons per square per 07563

Hypothetical Project (E) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)	Amount Used	Cost
230	Provide labor and materials TO INSTALL 18" WIDE Stressply IV mineral torch capsheet . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft		100 LF	
233	Provide labor and materials TO INSTALL 36" WIDE Stressply Mineral IV torch capsheet . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft		100 LF	
260	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING AT 4 GALLONS PER SQUARE with no polyester PER 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.		20,000 sq ft	
387	Provide labor and material to 6" WIDE UNIBOND ST. Roofs up to 25'-0" in height.	For quantities greater than 1000'; Per Lineal FT		4000 Lineal Ft	
390	Provide labor and material to install CoolSil Bleed Blocker Primer Roofs up to 25'-0" in height.	OVER- 10,000 S.F.		20,000 sq ft	

Total \$ _____

Hypothetical Project (F) Basis of Award

Project: Tile Roof

Building is 36' wide and 300' long.

The building shall have a wood deck with 3:12 slope all one direction.

Existing roof is a Spanish tile roof with one layer of 30 lb felt underlayment underneath.

The existing underlayment is mechanically fastened.

Remove existing tile and existing underlayment and install new self-adhering underlayment and reinstall existing tile.

Remove and replace 300' of mortar at ridge flashing.

Remove and replace 72' of tile pan at rake edges with 24 gauge Kynar metal.

Hypothetical Project (F) Basis of Award Worksheet

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)	Amount Used	Cost
271	Provide labor and materials to REMOVE EXISTING TILE AND NON ADHERED UNDERLAYMENT OVER WOOD DECK, INSTALL NEW R-MER SEAL SELF ADHERING UNDERLAYMENT, AND REINSTALL EXISTING TILE , including tile breakage from removal. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.		10,800 sq ft	
272	Provide labor and materials to REMOVE AND REPLACE MORTAR ON TILE ROOF . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft		300 LF	
273	Provide labor and materials to REMOVE AND REPLACE TILE PAN USING NEW.040 ALUM KYNAR FINISHED METAL ON TILE ROOF . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft		72 LF	

Total \$ _____

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
101	Straight Time Labor Rates (Portal to Portal)	Per Hour	
102	Overtime Labor Rates (Portal to Portal)	Per Hour	
103	Mileage- 20 mile radius from place of business	Per Hour	
104	Mileage- 21-100 mile radius from place of business	Per Hour	
105	Any portion of roofing not covered in this pricing sheet will be charged at material invoice with 10% contractor		
106	Provide labor and material for demolition of existing built-up roof system up to 1 roof with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
107	Provide labor and material for demolition of existing built-up roof system up to 1 roof with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
108	Provide labor and material for demolition of existing built-up roof system up to 1 roof with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
109	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
110	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
111	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with no insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
112	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
113	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
114	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
115	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
116	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
117	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with no insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
118	Provide labor and material for demolition of existing built-up roof system up to 1 roof with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
119	Provide labor and material for demolition of existing built-up roof system up to 1 roof with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
120	Provide labor and material for demolition of existing built-up roof system up to 1 roof with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
121	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
122	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
123	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with up to 4" of insulation and no gravel. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
124	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
125	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
126	Provide labor and material for demolition of existing built-up roof system up to 1 roof with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
127	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
128	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
129	Provide labor and material for demolition of existing built-up roof system up to 2 roofs with gravel surface with up to 4" of insulation. Demolition shall include metal components. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
130	Provide labor and material for removal of existing tile roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials minus the tile. Tile to be set on ground for reinstallation. Reinstallation of tile not included. Roofs up to 25'-0" in height.	0-1000 S.F.	
131	Provide labor and material for removal of existing tile roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials minus the tile. Tile to be set on ground for reinstallation. Reinstallation of tile not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
132	Provide labor and material for removal of existing tile roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials minus the tile. Tile to be set on ground for reinstallation. Reinstallation of tile not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
133	Provide labor and material for removal of existing metal roof system up to 1 roof including underlayment. Demolition shall include all existing roofing material and accessories. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
134	Provide labor and material for removal of existing metal roof system up to 1 roof including underlayment. Demolition shall include all existing roofing material and accessories. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
135	Provide labor and material for removal of existing metal roof system up to 1 roof including underlayment. Demolition shall include all existing roofing material and accessories. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
136	Provide labor and material for removal of up to 1 asphalt shingle roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	0-1000 S.F.	
137	Provide labor and material for removal of up to 1 asphalt shingle roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
138	Provide labor and material for removal of up to 1 asphalt shingle roof including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
139	Provide labor and material for removal of up to 2 asphalt shingle roofs including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	0-1000 S.F.	
140	Provide labor and material for removal of up to 2 asphalt shingle roofs including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
141	Provide labor and material for removal of up to 2 asphalt shingle roofs including underlayment over a wood deck. Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
142	Provide labor and material for removal of up to 1 single ply roof with coverboard . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	0-1000 S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
143	Provide labor and material for removal of up to 1 single ply roof with coverboard . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
144	Provide labor and material for removal of up to 1 single ply roof with coverboard . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
145	Provide labor and material for removal of up to 1 single ply roof with up to 4" of insulation . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	0-1000 S.F.	
146	Provide labor and material for removal of up to 1 single ply roof with up to 4" of insulation . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
147	Provide labor and material for removal of up to 1 single ply roof with up to 4" of insulation . Demolition shall include all roofing material, and metal component. Contractor shall include legal disposal of all materials. Installation not included. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
148	Provide labor and material to remove and replace 5/8" CDX Plywood. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	Per S.F.	
149	Provide labor and material to remove and replace 3/4" CDX Plywood. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	Per S.F.	
150	Provide labor and material to remove and replace 1/2" CDX Plywood. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Roofs up to 25'-0" in height.	Per S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
151	Provide labor and material to INSTALL new blocking for existing or new plywood roof deck. Blocking to be 2" x 4" x 16" long. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Plywood sheet to be 4' x 8'. Roofs up to 25'-0" in height.	Each.	
152	Provide labor and material to INSTALL new blocking for existing or new plywood roof deck. Blocking to be 2" x 6" x 16" long. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Plywood sheet to be 4' x 8'. Roofs up to 25'-0" in height.	Each.	
153	Provide labor and material to INSTALL new blocking for existing or new plywood roof deck. Blocking to be 4" x 4" x 16" long. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Plywood sheet to be 4' x 8'. Roofs up to 25'-0" in height.	Each.	
154	Provide labor and material to INSTALL new blocking for existing or new plywood roof deck. Blocking to be 4" x 6" x 16" long. Contractor shall be responsible for proper nailing to meet current code or documents. Contractor shall include legal disposal of all materials. Plywood sheet to be 4' x 8'. Roofs up to 25'-0" in height.	Each.	
155	Provide labor and materials for installation of new roof system IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
156	Provide labor and materials for installation of new roof system IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
157	Provide labor and materials for installation of new roof system IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
158	Provide labor and materials for installation of new roof system around a 8" HIGH CURB IN HOT ASPHALT PER SECTION 07550 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
159	Provide labor and materials for installation of new roof system. 2 ply TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
160	Provide labor and materials for installation of new roof system. 2 ply TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
161	Provide labor and materials for installation of new roof system. 2 ply TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
162	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH TORCH APPLIED MODIFIED ROOF SYSTEM PER SECTION 07551 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
163	Provide labor and materials for installation of new roof system. 2 ply SELF ADHERING MODIFIED ROOF SYSTEM PER SECTION 07552 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
164	Provide labor and materials for installation of new roof system. 2 ply SELF ADHERING MODIFIED ROOF SYSTEM PER SECTION 07552 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
165	Provide labor and materials for installation of new roof system. 2 ply SELF ADHERING MODIFIED ROOF SYSTEM PER SECTION 07552 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
166	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH SELF ADHERING MODIFIED SYSTEM PER SECTION 07552 over existing or new roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
167	Provide labor and materials for installation of new roof system. 2 ply HOT ASPHALT MODIFIED ROOF SYSTEM PER SECTION 07553 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
168	Provide labor and materials for installation of new roof system. 2 ply HOT ASPHALT MODIFIED ROOF SYSTEM PER SECTION 07553 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
169	Provide labor and materials for installation of new roof system. 2 ply HOT ASPHALT MODIFIED ROOF SYSTEM PER SECTION 07553 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
170	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH 2 ply HOT ASPHALT MODIFIED ROOF SYSTEM PER SECTION 07553 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
171	Provide labor and materials for installation of new roof system. 2 ply COLD PROCESS MODIFIED ROOF SYSTEM PER SECTION 07554 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
172	Provide labor and materials for installation of new roof system. 2 ply COLD PROCESS MODIFIED ROOF SYSTEM PER SECTION 07554 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
173	Provide labor and materials for installation of new roof system. 2 ply COLD PROCESS MODIFIED ROOF SYSTEM PER SECTION 07554 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
174	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH 2 ply COLD PROCESS MODIFIED ROOF SYSTEM PER SECTION 07554 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
175	Provide labor and materials for installation of new roof system. 2 ply KEE Single Ply and Torch ROOF SYSTEM PER SECTION 07555 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	
176	Provide labor and materials for installation of new roof system. 2 ply KEE Single Ply and Torch ROOF SYSTEM PER SECTION 07555 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
177	Provide labor and materials for installation of new roof system. 2 ply KEE Single Ply and Torch ROOF SYSTEM PER SECTION 07555 over DensDeck Prime. Price does not include actual DensDeck Prime. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
178	Provide labor and materials for installation of new roof system around a 8" HIGH CURB WITH 2 ply KEE Single Ply and Torch ROOF SYSTEM PER SECTION 07555 over existing or new roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
179	Provide labor and materials for installation and mechanical attachment of 1/4" DensDeck Prime over metal deck or wood deck . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
180	Provide labor and materials for installation and mechanical attachment of 1/2" DensDeck Prime over metal deck or wood deck . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
181	Provide labor and materials for installation and mechanical attachment of 5/8" DensDeck Prime over metal deck or wood deck . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
182	Provide labor and materials for installation of 1/4" DensDeck Prime over insulation in Insul Lock HR insulation adhesive . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
183	Provide labor and materials for installation of 1/2" DensDeck Prime over insulation in Insul Lock HR insulation adhesiv . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
184	Provide labor and materials for installation of 1/2" wood fiber board that is primed on six sides in hot asphalt . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
185	Provide labor and materials for installation of 1/2" wood fiber board that is primed on six sides in Insul Lock HR insulation adhesive . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
186	Provide labor and materials for installation of 2" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.	
187	Provide labor and materials for installation of 2 1/2" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.	
188	Provide labor and materials for installation of 3" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
189	Provide labor and materials for installation of 4" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.	
190	Provide labor and materials for installation of 5" ZinkJak pipe flashing w/ min. 4" flange, 4lb / s.f. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each.	
191	Provide labor and materials for installation of NEW 3" CAST IRON DRAIN including clamp rings and covers during a reroof. Contractor shall include legal disposal of all excess materials. Roofs up to 25' in height.	Each.	
192	Provide labor and materials for installation of NEW 4" CAST IRON DRAIN including clamp rings and covers during a reroof. Contractor shall include legal disposal of all excess materials. Roofs up to 25' in height.	Each.	
193	Provide labor and materials for installation of NEW 5" CAST IRON DRAIN including clamp rings and covers during a reroof. Contractor shall include legal disposal of all excess materials. Roofs up to 25' in height.	Each.	
194	Provide labor and materials to TO SUMP AN EXISTING CAST IRON DRAIN ASSEMBLY IN PLYWOOD DECK. Sump to lower drain assembly 6". Sump to be built using 2"x6" framing with plywood bottom to match existing plywood deck thickness and style and built per current code. Price to include replacement of drain bowl assembly and to be done during a reroof. Roofs up to 25'-0" in height.	Each.	
195	Provide labor and materials to ROOF IN EXISTING DRAIN DURING A REROOF. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Each	
196	Provide labor and materials for installation of PERLITE INSULATED CRICKETS avg. 3" thickness with 1/2" slope. Contractors shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
197	Provide labor and materials for installation of POLYISOCYANURATE INSULATED CRICKETS avg. 3" thickness with 1/2" slope. Contractors shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
198	Provide labor and materials for installation of NEW PLYWOOD CRICKETS avg. 3" thickness with 1/2" slope. Contractors shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
199	Provide labor and materials for installation of ALUMINUM COPING - 8" wide, 4" inside and outside face, .040 ALUM , kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
200	Provide labor and materials for installation of ALUMINUM COPING - 10" wide, 4" inside and outside face, .040 ALUM, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
201	Provide labor and materials for installation of ALUMINUM COPING - 12" wide, 4" inside and outside face, .040 Alum, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
202	Provide labor and materials for installation of ALUMINUM 4" DRIP EDGE .040 Alum, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft.	
203	Provide labor and materials for installation of ALUMINUM GRAVEL STOP - 4"drip face, .040 Alum, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft.	
204	Provide labor and materials for installation of COPING METAL - 8" wide, 4" inside and outside face, 24 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
205	Provide labor and materials for installation of COPING METAL - 10" wide, 4" inside and outside face, 22 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
206	Provide labor and materials for installation of COPING METAL - 12" wide, 4" inside and outside face, 22 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
207	Provide labor and materials for installation of 4" DRIP EDGE 24 gauge metal, 24 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft.	
208	Provide labor and materials for installation of GRAVEL STOP - 4"drip face, 24 GA, kynar factory finish with continuous outside cleat. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft.	
209	Provide labor and materials for installation of LEAD DRAIN FLASHINGS 4lb min, 30"x30" . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Each	
210	Provide labor and materials for installation of ROOF BOX GUTTERS 24 GA, 16" stretch out, Kynar factory finish. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft., Min 100 l.f.	
211	Provide labor and materials for installation of ROOF BOX GUTTERS 22 GA, 16" stretch out, Kynar factory finish. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	Lineal Ft., Min 100 l.f.	
212	Provide labor and materials for installation of ROOF DOWN SPOUTS 24 GA. 3" X 4" Kynar factory finish. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
213	Provide labor and materials for installation of ROOF DOWN SPOUTS 22 GA, 3" x 4" Kynar factory finish. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
214	Provide labor and materials for installation of METAL ROOF DOWN SPOUTS SCHED. 40 - 4" round. Contractor to weld, galvanize, prime and paint prior to installation. Shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
215	Provide labor and materials for installation of NEW METAL ROOF DOWN SPOUTS SCHED. 40 - 5" round. Contractor to weld, galvanize, prime and paint prior to installation. Shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
216	Provide labor and materials for installation of METAL ROOF DOWN SPOUTS SCHED. 40 - 3"X 4" rectangle pipe . Contractor to weld, galvanize, prime and paint prior to installation. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
217	Provide labor and materials for installation of Dura-Blok- 4"(H) X 6" (W)X 9.6"(L) . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
218	Provide labor and materials for installation of new redwood WOOD SLEEPERS/ BLOCKING 4" X 4" min, 8" in length . Adhere inverted 72lb generic capsheet to bottom of block. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
219	Provide labor and materials for installation of WOOD NAILERS MIN. 2" x 4" Contractor shall include legal disposal of all excess materials. Roofs up to 25' in height.	Lineal Ft.	
220	Provide labor and materials TO INSTALL NEW 3'0" x 3'0" ROOF HATCH finished in Federal Safety Red Powder Coat to replace an existing hatch. Price does not include roofing hatch into place. Roofs up to 25'-0" in height.	Each	
221	Provide labor and materials TO INSTALL NEW 3'0" x 4'0" ROOF HATCH finished in Federal Safety Red Powder Coat to replace an existing hatch. Price does not include roofing hatch into place. Roofs up to 25'-0" in height.	Each	
222	Provide labor and materials TO INSTALL NEW 4'0" x 4'0" ROOF HATCH finished in Federal Safety Red Powder Coat to replace an existing hatch. Price does not include roofing hatch into place. Roofs up to 25'-0" in height.	Each	
223	Provide labor and materials TO REPLACE EXISTING STANDARD 4'X8' SKYLIGHT unit with new curb mounted, aluminum framed, double glazed unit with outer opaque acrylic lense. To include removal and disposal of existing unit. Roofs up to 25'-0" in height.	For quantities of 1-5; Each	
224	Provide labor and materials TO REPLACE EXISTING STANDARD 4'X8' SKYLIGHT unit with new curb mounted, aluminum framed, double glazed unit with outer opaque acrylic lense. To include removal and disposal of existing unit. Roofs up to 25'-0" in height.	For quantities greater than 5; Each	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
225	Provide labor and materials for installation of FOR STANDARD 3-COURSE WORK - no preparation. Contractor to use Kee Lock white mastic. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
226	Provide labor and materials for installation of FOR STANDARD 5-COURSE WORK - no preparation. Contractor to use Kee Lock white mastic. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
227	Provide labor and materials for installation of CUT AND/OR CLEAN AND 3 COURSE -demolition and removal. Contractor to use Kee Lock white mastic. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
228	Provide labor and materials for installation of CUT AND/OR CLEAN AND 5 COURSE -demolition and removal. Contractor to use Kee Lock white mastic. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per S.F.	
229	Provide labor and materials to prime and install 9" wide HPR Torchbase. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft	
230	Provide labor and materials to prime and install 18" wide HPR Torchbase. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft	
231	Provide labor and materials TO INSTALL 9" WIDE Stressply IV mineral torch capsheet. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft	
232	Provide labor and materials TO INSTALL 18" WIDE Stressply IV mineral torch capsheet. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft	
233	Provide labor and materials TO INSTALL 36" WIDE Stressply Mineral IV torch capsheet Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft	
234	Provide labor and materials TO INSTALL 2 LAYERS TYPE IV FELTS, set in asphalt per Section 07550. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0-1000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
235	Provide labor and materials TO INSTALL 2 LAYERS TYPE IV FELTS, set in asphalt per Section 07550. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
236	Provide labor and materials TO INSTALL 2 LAYERS TYPE IV FELTS, set in asphalt per Section 07550. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER-10,000 S.F.	
237	Provide labor and materials TO INSTALL 4" .040 ALUMINUM SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
238	Provide labor and materials TO INSTALL 5" .040 ALUMINUM SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
239	Provide labor and materials TO INSTALL 6" .040 ALUMINUM SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
240	Provide labor and materials TO INSTALL 4" 22 GA SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
241	Provide labor and materials TO INSTALL 5" 22GA SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
242	Provide labor and materials TO INSTALL 6" 22GA SURFACEMOUNT COUNTERFLASHING, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
243	Provide labor and materials TO INSTALL 4" .040 ALUMINUM REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
244	Provide labor and materials TO INSTALL 5" .040 ALUMINUM REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
245	Provide labor and materials TO INSTALL 6" .040 ALUMINUM REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
246	Provide labor and materials TO INSTALL 4" 22 GA REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
247	Provide labor and materials TO INSTALL 5" 22GA REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
248	Provide labor and materials TO INSTALL 6" 22GA REGLET MOUNTED COUNTERFLASHING using existing reglet, factory Kynar painted. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft., Min 100 l.f.	
249	Provide labor and materials for powerwashing and installation of Pyramic TITLE 24 WHITE COATING over roof at 3 gallons per sq (2 coats, 1.5 gallons per coat). Contractor shall include legal disposal of all excess materials.	0- 1000 S.F.	
250	Provide labor and materials for powerwashing and installation of Pyramic TITLE 24 WHITE COATING over roof at 3 gallons per sq (2 coats, 1.5 gallons per coat). Contractor shall include legal disposal of all excess materials.	1000-10,000 S.F.	
251	Provide labor and materials for powerwashing and installation of Pyramic TITLE 24 WHITE COATING over roof at 3 gallons per sq (2 coats, 1.5 gallons per coat). Contractor shall include legal disposal of all excess materials.	OVER 10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
252	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 40 lbs per square of Title 24 bright white minerals embedded into wet coating. Contractor shall include legal disposal of all excess materials.	0- 1000 S.F.	
253	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 40 lbs per square of Title 24 bright white minerals embedded into wet coating. Contractor shall include legal disposal of all excess materials.	1000-10,000 S.F.	
254	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 40 lbs per square of Title 24 bright white minerals embedded into wet coating. Contractor shall include legal disposal of all excess materials.	OVER 10,000 S.F.	
255	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 300 lbs per square of 5/8" Title 24 bright gravel embedded into wet coating. Contractor shall include legal disposal of all excess materials.	0- 1000 S.F.	
256	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 300 lbs per square of 5/8" Title 24 bright gravel embedded into wet coating. Contractor shall include legal disposal of all excess materials.	1000-10,000 S.F.	
257	Provide labor and materials for installation of White Star polyurea TITLE 24 WHITE COATING over roof at 2 gallons per sq to include 300 lbs per square of 5/8" Title 24 bright gravel embedded into wet coating. Contractor shall include legal disposal of all excess materials.	OVER 10,000 S.F.	
258	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING AT 4 GALLONS PER SQUARE (with no polyester PER 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
259	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING AT 4 GALLONS PER SQUARE with no polyester PER 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
260	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING AT 4 GALLONS PER SQUARE with no polyester PER 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.	
261	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING at 3 gallons per square, fully embed polyester into wet coating, and apply an additional 2 gallons per square of COOL SIL the following day per spec section 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
262	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING at 2 gallons per square, fully embed polyester into wet coating, and apply an additional 3 gallons per square of COOL SIL the following day per spec section 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
263	Provide labor and materials TO INSTALL COOL SIL SILICONE COATING at 2 gallons per square, fully embed polyester into wet coating, and apply an additional 3 gallons per square of COOL SIL the following day per spec section 07563. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.	
264	Provide labor and materials for installation of 2 gallons per square of Energizer LO to roof. Include powerwashing of existing roof. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
265	Provide labor and materials for installation of 2 gallons per square of Energizer LO to roof. Include powerwashing of existing roof. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
266	Provide labor and materials for installation of 2 gallons per square of Energizer LO to roof. Include powerwashing of existing roof. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
267	Provide labor and materials to do a 6" wide THREE COURSE OF WHITE KNIGHT PLUS WC COATING at 2 gallons per square, fully embed polyester into wet coating, and apply an additional 2 gallons per square of WHITE KNIGHT PLUS WC the same day. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height. Minimum of 100 lineal ft	Per Lineal Ft.	
268	Provide labor and materials to SEAL EXISTING DUCTWORK SEAMS using GlenKote Duct Sealer. Includes cleaning of existing ductwork and light scraping of debris. Min of 25 ft. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
269	Provide labor and materials to REMOVE EXISTING TILE AND NON ADHERED UNDERLAYMENT OVER WOOD DECK, INSTALL NEW R-MER SEAL SELF ADHERING UNDERLAYMENT, AND REINSTALL EXISTING TILE, including tile breakage from removal. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
270	Provide labor and materials to REMOVE EXISTING TILE AND NON ADHERED UNDERLAYMENT OVER WOOD DECK, INSTALL NEW R-MER SEAL SELF ADHERING UNDERLAYMENT, AND REINSTALL EXISTING TILE, including tile breakage from removal. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
271	Provide labor and materials to REMOVE EXISTING TILE AND NON ADHERED UNDERLAYMENT OVER WOOD DECK, INSTALL NEW R-MER SEAL SELF ADHERING UNDERLAYMENT, AND REINSTALL EXISTING TILE, including tile breakage from removal. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER 10,000 S.F.	
272	Provide labor and materials to REMOVE AND REPLACE MORTAR ON TILE ROOF. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
273	Provide labor and materials to REMOVE AND REPLACE TILE PAN USING NEW.040 ALUM KYNAR FINISHED METAL ON TILE ROOF. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
274	Provide labor and materials to REMOVE AND REPLACE 24" WIDE TILE VALLEY METAL USING NEW .040 ALUM KYNAR FINISHED METAL ON TILE ROOF. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
275	Provide labor and materials to REMOVE AND REPLACE TILE PAN USING NEW 24 GA KYNAR FINISHED METAL ON TILE ROOF. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
276	Provide labor and materials to REMOVE AND REPLACE 24" WIDE TILE VALLEY METAL USING NEW 24 GA KYNAR FINISHED METAL ON TILE ROOF PER SECTION 07322. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
277	Provide labor and materials for installation to install one Pelican Hood for four penetration cluster. Hood to be fully soldered 22 gauge metal. Flashed in with HPR Torch Base and Stressply IV mineral. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
278	Provide labor and materials for installation of Tuff Stuff Caulking to existing coping cap joints. Coping cap 16" min stretch out. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height. 100 lineal foot min.	Per Lineal Ft	
279	Provide labor and materials for installation of 24 gauge 18" wide ridge cap for classroom portable. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height. 40 lineal foot min	Per Lineal Ft	
280	Provide labor and materials for installation of one layer of self adhering R-MER SEAL SELF ADHERING UNDERLAYMENT BASE SHEET. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
281	Provide labor and materials for installation of one layer of self adhering R-MER SEAL SELF ADHERING UNDERLAYMENT BASE SHEET. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
282	Provide labor and materials for installation of one layer of self adhering R-MER SEAL SELF ADHERING UNDERLAYMENT BASE SHEET . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
283	Provide labor and materials for installation of R-MER LOC METAL ROOFING SYSTEM PER SECTION 07410 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
284	Provide labor and materials for installation of R-MER LOC METAL ROOFING SYSTEM PER SECTION 07410 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
285	Provide labor and materials for installation of R-MER LOC METAL ROOFING SYSTEM PER SECTION 07410 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
286	Provide labor and materials for installation of new roof system around a 8" HIGH CURB IN R-MER LOC METAL ROOFING SYSTEM over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
287	Provide labor and materials TO INSTALL R-MER LOC RIDGE ASSEMBLY PER 07410 Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
288	Provide labor and materials TO INSTALL R-MER LOC HIP ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
289	Provide labor and materials TO INSTALL R-MER LOC HEAD ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
290	Provide labor and materials TO INSTALL R-MER LOC RAKE ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
291	Provide labor and materials TO INSTALL R-MER LOC EAVE ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
292	Provide labor and materials TO INSTALL R-MER LOC EXPANDING VALLEY ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
293	Provide labor and materials TO INSTALL R-MER LOC SLOPING JAMB ASSEMBLY PER 07410 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
294	Provide labor and materials for installation of R-MER SPAN METAL ROOFING SYSTEM PER SECTION 07411 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
295	Provide labor and materials for installation of R-MER SPAN METAL ROOFING SYSTEM PER SECTION 07411 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
296	Provide labor and materials for installation of R-MER SPAN METAL ROOFING SYSTEM PER SECTION 07411 over existing roofing system or new plywood. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
297	Provide labor and materials for installation of new roof system around a 8" HIGH CURB IN R-MER SPAN METAL ROOFING SYSTEM over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
298	Provide labor and materials TO INSTALL R-MER SPAN RIDGE ASSEMBLY PER 07411 Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
299	Provide labor and materials TO INSTALL R-MER SPAN HIP ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
300	Provide labor and materials TO INSTALL R-MER SPAN HEAD ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
301	Provide labor and materials TO INSTALL R-MER SPAN RAKE ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
302	Provide labor and materials TO INSTALL R-MER SPAN EAVE ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
303	Provide labor and materials TO INSTALL R-MER SPAN EXANDING VALLEY ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
304	Provide labor and materials TO INSTALL R-MER SPAN SLOPING JAMB ASSEMBLY PER 07411 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Lineal Ft.	
305	Provide labor and materials for installation of new 3" NEOPRENE PIPE BOOT PER 07410 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
306	Provide labor and materials for installation of new a 4" NEOPRENE PIPE BOOT PER 07410 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
307	Provide labor and materials for installation of new 5" NEOPRENE PIPE BOOT PER 07410 over existing or new plywood roof deck. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Each	
308	Provide labor and materials to INSTALL R-MER WALL METAL WALL PANELS PER SECTION 07421 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	0- 1000 S.F.	
309	Provide labor and materials to INSTALL R-MER WALL METAL WALL PANELS PER SECTION 07421 . Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
310	Provide labor and materials to INSTALL R-MER WALL METAL WALL PANELS PER SECTION 07421. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
311	Provide labor and materials for installation of ASPHALT ROOF 3 TAB SHINGLES. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	0- 1000 S.F.	
312	Provide labor and materials for installation of ASPHALT ROOF 3 TAB SHINGLES. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	1000-10,000 S.F.	
313	Provide labor and materials for installation of ASPHALT ROOF 3 TAB SHINGLES. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	OVER- 10,000 S.F.	
314	Provide labor and materials for installation of ASPHALT ROOF SHINGLES "TIMBERLINE HD" LIFETIME DIMENSIONAL. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	0- 1000 S.F.	
315	Provide labor and materials for installation of ASPHALT ROOF SHINGLES "TIMBERLINE HD" LIFETIME DIMENSIONAL. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	1000-10,000 S.F.	
316	Provide labor and materials for installation of ASPHALT ROOF SHINGLES "TIMBERLINE HD" LIFETIME DIMENSIONAL. Include one layer of R-Mer Seal Self Adhering underlayment. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height	OVER- 10,000 S.F.	
317	Provide labor and materials to REMOVE AND REPLACE 3/4' SCHEDULE 40 CONDENSATION LINES. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
318	Provide labor and materials to REMOVE AND REPLACE 3/4' SCHEDULE 80 CONDENSATION LINES. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
319	Provide labor and materials to REMOVE AND REPLACE HVAC INSULATED PIPE ALUMINUM COVERS THAT ARE 8" IN DIAMETER. Contractor shall include legal disposal of all excess materials. Roofs up to 25'-0" in height.	Per Lineal Ft	
320	Provide labor and materials to install new 1/2" thick 3'x4' TRAFGARD RUBBERIZED WALKPAD. Adhere to roof with mastic. Roofs up to 25'-0" in height. Min of 30 walkpads	Per Walkpad	
321	Provide labor and materials to loose lay one layer of red rosin paper over a plywood deck. Roofs up to 25'-0" in height.	0- 1000 S.F.	
322	Provide labor and materials to loose lay one layer of red rosin paper over a plywood deck. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
323	Provide labor and materials to loose lay one layer of red rosin paper over a plywood deck. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
324	Provide labor and materials to nail one layer of HPR Glasbase Type II Base Sheet to a plywood deck. Roofs up to 25'-0" in height.	0- 1000 S.F.	
325	Provide labor and materials to nail one layer of HPR Glasbase Type II Base Sheet to a plywood deck. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
326	Provide labor and materials to nail one layer of HPR Glasbase Type II Base Sheet to a plywood deck. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
327	Provide labor and materials to install two layers of HPR Glasfelts in hot asphalt. Roofs up to 25'-0" in height.	0- 1000 S.F.	
328	Provide labor and materials to install two layers of HPR Glasfelts in hot asphalt. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
329	Provide labor and materials to install two layers of HPR Glasfelts in hot asphalt. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
330	Provide labor and materials to install one layer of STRESSPLY PLUS FR MINERAL in hot asphalt. Roofs up to 25'-0" in height.	0- 1000 S.F.	
331	Provide labor and materials to install one layer of STRESSPLY PLUS FR MINERAL in hot asphalt. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
332	Provide labor and materials to install one layer of STRESSPLY PLUS FR MINERAL in hot asphalt. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
333	Provide labor and materials to install TWO LAYERS OF HPR GLASBASE IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	0- 1000 S.F.	
334	Provide labor and materials to install TWO LAYERS OF HPR GLASBASE IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
335	Provide labor and materials to install TWO LAYERS OF HPR GLASBASE IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
336	Provide labor and materials to install ONE LAYER OF STRESSBASE 80 IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	0- 1000 S.F.	
337	Provide labor and materials to install ONE LAYER OF STRESSBASE 80 IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
338	Provide labor and materials to install ONE LAYER OF STRESSBASE 80 IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
339	Provide labor and materials to install ONE LAYER OF STRESSPLY PLUS FR MINERAL IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	0- 1000 S.F.	
340	Provide labor and materials to install ONE LAYER OF STRESSPLY PLUS FR MINERAL IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
341	Provide labor and materials to install ONE LAYER OF STRESSPLY PLUS FR MINERAL IN 2 GALLONS PER SQUARE OF WEATHERKING PLUS WC. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
342	Provide labor and materials to install ONE LAYER OF TORCH APPLIED HPR TORCHBASE. Roofs up to 25'-0" in height.	0- 1000 S.F.	
343	Provide labor and materials to install ONE LAYER OF TORCH APPLIED HPR TORCHBASE. Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
344	Provide labor and materials to install ONE LAYER OF TORCH APPLIED HPR TORCHBASE . Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
345	Provide labor and materials to install ONE LAYER OF TORCH APPLIED STRESSPLY IV PLUS MINERAL . Roofs up to 25'-0" in height.	0- 1000 S.F.	
346	Provide labor and materials to install ONE LAYER OF TORCH APPLIED STRESSPLY IV PLUS MINERAL . Roofs up to 25'-0" in height.	1000-10,000 S.F.	
347	Provide labor and materials to install ONE LAYER OF TORCH APPLIED STRESSPLY IV PLUS MINERAL . Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
348	Provide labor and materials to install ONE LAYER OF KEE STONE 60 MIL KEE SINGLE PLY IN KEE LOCK FOAM ADHESIVE . Roofs up to 25'-0" in height.	0- 1000 S.F.	
349	Provide labor and materials to install ONE LAYER OF KEE STONE 60 MIL KEE SINGLE PLY IN KEE LOCK FOAM ADHESIVE . Roofs up to 25'-0" in height.	1000-10,000 S.F.	
350	Provide labor and materials to install ONE LAYER OF KEE STONE 60 MIL KEE SINGLE PLY IN KEE LOCK FOAM ADHESIVE . Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
351	Provide labor and materials to install ONE LAYER OF SELF ADHERING HPR SA BASE SHEET over DensDeck Prime, do not include DensDeck Prime. Roofs up to 25'-0" in height.	0- 1000 S.F.	
352	Provide labor and materials to install ONE LAYER OF SELF ADHERING HPR SA BASE SHEET over DensDeck Prime, do not include DensDeck Prime. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
353	Provide labor and materials to install ONE LAYER OF SELF ADHERING HPR SA BASE SHEET over DensDeck Prime, do not include DensDeck Prime. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
354	Provide labor and materials to install ONE LAYER OF SELF ADHERING STRESSPLY SA FR MINERAL . Roofs up to 25'-0" in height.	0- 1000 S.F.	
355	Provide labor and materials to install ONE LAYER OF SELF ADHERING STRESSPLY SA FR MINERAL . Roofs up to 25'-0" in height.	1000-10,000 S.F.	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
356	Provide labor and materials to install ONE LAYER OF SELF ADHERING STRESSPLY SA FR MINERAL . Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
357	Provide labor and materials to install SA PRIMER (SELF ADHERING PRIMER) at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	0- 1000 S.F.	
358	Provide labor and materials to install SA PRIMER (SELF ADHERING PRIMER) at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
359	Provide labor and materials to install SA PRIMER (SELF ADHERING PRIMER) at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
360	Provide labor and materials to install GARLA PRIME VOC primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	0- 1000 S.F.	
361	Provide labor and materials to install GARLA PRIME VOC primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
362	Provide labor and materials to install GARLA PRIME VOC primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
363	Provide labor and materials to install GARLA BLOCK primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	0- 1000 S.F.	
364	Provide labor and materials to install GARLA BLOCK primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
365	Provide labor and materials to install GARLA BLOCK primer at the rate of 1/2 gallon per square. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
366	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 2" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each	
367	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 3" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each	
368	Provide labor and materials to install TUFF FLASH LIQUID FLASHING with embedded Firm Polyester for 4" pipe, Min of 10 pipes. Roofs up to 25'-0" in height.	Each	

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Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
369	Provide labor and materials to install a new CAST IRON DRAIN SCREEN for an existing roof drain. Roofs up to 25'-0" in height. Min of 10 drain screens.	Each	
370	Provide labor and materials to install 3" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	0- 1000 S.F.	
371	Provide labor and materials to install 3" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
372	Provide labor and materials to install 3" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
373	Provide labor and materials to install 5" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	0- 1000 S.F.	
374	Provide labor and materials to install 5" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	1000-10,000 S.F.	
375	Provide labor and materials to install 5" of POLYISOCYANURATE INSULATION over a metal or wood deck. Mechanically fasten with seventeen 3" plates and screws per 4'x8' board. Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	
376	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 0-6". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	
377	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 6-9". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	

BID FORM A
 SCHEDULE UNIT COSTS
 5-29-2024

Overall Item:	Description (height, depth, length)	Unit	Unit Bid Price (EA)
378	Provide labor and material to install 1/4" per ft tapered POLYISOCYANURATE INSULATION in depths of 9-12". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	
379	Provide labor and material to install 1/2" per ft tapered POLYISOCYANURATE INSULATION in depths of 0-6". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	
380	Provide labor and material to install 1/2" per ft tapered POLYISOCYANURATE INSULATION in depths of 6-9". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	
381	Provide labor and material to install 1/2" per ft tapered POLYISOCYANURATE INSULATION in depths of 9-12". Mechanically fasten with eight plates and screws per 4' x 4' board. Roofs up to 25'-0" in height.	Per S.F.	
382	Provide labor and materials to install 4' x 4' double dome skylight . Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities of 1-10; Each	
383	Provide labor and materials to install 4' x 4' double dome skylight . Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities greater than 10; Each	
384	Provide labor and materials to install 4' x 8' double dome skylight . Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities of 1-10; Each	
385	Provide labor and materials to install 4' x 8' double dome skylight . Remove and dispose of existing skylight. Roofs up to 25'-0" in height.	For quantities greater than 10; Each	
386	Provide labor and material to 6" WIDE UNIBOND ST. Roofs up to 25'-0" in height.	For quantities greater than 20'; Per Lineal Ft	
387	Provide labor and material to 6" WIDE UNIBOND ST. Roofs up to 25'-0" in height.	For quantities greater than 1000'; Per Lineal FT	
388	Provide labor and material to install CoolSil Bleed Blocker Primer Roofs up to 25'-0" in height.	0- 1000 S.F.	
389	Provide labor and material to install CoolSil Bleed Blocker Primer Roofs up to 25'-0" in height.	1000-10,000 S.F.	
390	Provide labor and material to install CoolSil Bleed Blocker Primer Roofs up to 25'-0" in height.	OVER- 10,000 S.F.	

**BID FORM B
BASIS OF AWARD
WORKSHEET**

Please note that all line item prices for hypothetical bids must match up exactly to line item prices in Bid Form A. Total at bottom of this page must be the same as the total on the final bid form.

Hypothetical Project A- Hot Asphalt Roof (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in numbers)

Hypothetical Project B- Torch Applied Roof (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in numbers)

Hypothetical Project C- Standing Seam Metal Roof (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in numbers)

Hypothetical Project D- Shingle Roof (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in number)

Hypothetical Project E- Restoration System (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in numbers)

Hypothetical Project F- Tile Roof (Basis of Award)

Total Cost: \$ _____
(Bid amount in writing)

Dollars \$ _____
(Bid amount in numbers)

Grand Total Bid Amount: MUST BE INCLUDED on PAGE 1 of the BID FORM.

**Total Cost: \$ _____
(Bid amount in writing)**

**Dollars \$ _____
(Bid amount in numbers)**

Manufacturer's Checklist and Questionnaire.

All items on this list must be completed and included in your bid package.

- 1) Test Reports: Submit test reports, prepared by an independent testing agency for the capsheet and base flashing plies specified in section 07550, 07551, 07552, 07553, and 07554 showing that the materials meet tensile strength, tear strength, and elongation properties listed in the specification.
- 2) Written certification from the roofing system manufacturer certifying the applicator is currently authorized for the installation of the specified roof system.
- 3) A written notarized statement from a corporate officer of the manufacturing company stating that he or she has reviewed the specifications and that a full time employee of the company will provide inspections at least three (3) days per week during times when any of their materials are being installed for a minimum of 1 hour each day at no charge to the District or the Contractor.
- 4) Submit a copy of an unexecuted manufacturer's 30 year, labor and materials, non-prorated, hot asphalt roofing warranty specified in section 07550 for review
- 5) Submit a copy of an unexecuted manufacturer's 30 year, labor and materials, non-prorated, standing seam roofing warranty specified in section 07411 for review
- 5) Submit a copy of an unexecuted manufacturer's 10 year, labor and materials, non-prorated, silicone restoration roofing warranty specified in section 07563 for review
- 5) Submit a copy of an unexecuted manufacturer's 10 year, labor and materials, non-prorated, wall panel roofing warranty specified in section 07421 for review
- 6) Proof that the manufacturer has been in business for a minimum number of years (30) equal to the warranty period required for this project

APPENDIX B

General Conditions

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GENERAL CONDITIONS

ARTICLE 1. DEFINITIONS

- (a) Action of the Governing Board is a vote of a majority of the members in a lawful meeting.
- (b) Addenda are the changes in plans, specifications, drawings, and/or Project Documents which have been authorized in writing by the DISTRICT or ARCHITECT, and which alter, explain, or clarify the Project Documents prior to the bid deadline.
- (c) Approval means written authorization by ARCHITECT or DISTRICT.
- (d) Agreement includes collectively all Project Documents.
- (e) Project Documents includes collectively, to wit: Notice Calling for Bids, Information for Bidders, Bid Form, Bid Security, Designation of Subcontractor form, Information Required of Bidder, all prequalification forms submitted pursuant to Public Contract Code Section 20111.5, if any, Noncollusion Affidavit, Workers' Compensation Certificate, Faithful Performance Bond, Payment Bond, Agreement, Escrow Agreement, Drug-Free Workplace Certification, Criminal Records Check Certification, Change Order forms, Shop Drawing Transmittals form, Insurance Certificates and Endorsements, Guarantee form, Contractor's Certificate Regarding Non-Asbestos Containing Materials, Disabled Veteran Business Enterprises Certification, if applicable, General Conditions, Supplemental Conditions, if any, Special Conditions, if any, Drawings, Specifications, and all modifications, addenda and amendments thereto. The Project Documents are complementary, and what is called for by any one shall be as binding as if called for by all.
- (f) CONTRACTOR or DISTRICT are those mentioned as such in the Agreement. They are treated throughout the Project Documents as if they are of singular number and neuter gender.
- (g) DISTRICT is the Governing Board or its duly authorized representative.
- (h) Locality in which the work is performed means the county and city in which the work is done.
- (i) Project is the planned undertaking as provided for in the Project Documents by DISTRICT and CONTRACTOR.
- (j) Provide shall include "provide complete in place," that is, "furnish and install."
- (k) Safety Orders are those issued by the Division of Industrial Safety and OSHA safety and health standards for construction.

(l) Standards, Rules, and Regulations referred to are recognized printed standards and shall be considered as one and a part of these specifications within limits specified.

(m) Subcontractor, as used herein, includes those having a direct contractual relationship with CONTRACTOR and one who furnishes material worked to a special design according to plans, drawings, and specifications, but does not include one who merely furnishes material not so worked.

(n) Surety is the person, firm, or corporation that executes as a California admitted surety insurer, the CONTRACTOR's Bid Security, faithful performance bond and payment bond.

(o) Work of the CONTRACTOR or subcontractor includes labor or materials (including, without limitation, equipment and appliances) or both, incorporated in, or to be incorporated in the Project.

(p) Workers includes laborer, worker, or mechanic.

ARTICLE 2. STATUS OF CONTRACTOR

(a) CONTRACTOR is and shall at all times be deemed to be an independent contractor and shall be wholly responsible for the manner in which it performs the services required of it by the terms of the Project Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the DISTRICT and CONTRACTOR or any of CONTRACTOR's agents or employees. CONTRACTOR assumes exclusively the responsibility for the acts of its employees as they relate to the services to be provided during the course and scope of their employment. CONTRACTOR, its agents and employees shall not be entitled to any rights or privileges of DISTRICT employees and shall not be considered in any manner to be DISTRICT employees. DISTRICT shall be permitted to monitor the activities of the CONTRACTOR to determine compliance with the terms of the Project Documents.

(b) Contractors are required by law to be licensed and regulated by the Contractors' State License Board. Any CONTRACTOR not so licensed is subject to penalties under the law, and the contract will be considered void pursuant to Section 7028.7 of the Business and Professions Code. Any questions concerning a contractor may be referred to the Registrar, Contractors' State License Board, 9821 Business Park Drive, P. O. Box 26000, Sacramento, CA 95826.

ARTICLE 3. CHANGE IN NAME AND NATURE OF CONTRACTOR'S LEGAL ENTITY

Before CONTRACTOR makes any change in the name or legal nature of the CONTRACTOR's entity, CONTRACTOR shall first notify the DISTRICT in writing and cooperate with DISTRICT in making such changes as the DISTRICT may request in the Project Documents.

ARTICLE 4. CONTRACTOR'S SUPERVISION, PROSECUTION AND PROGRESS

(a) During progress of the work, CONTRACTOR shall keep on the work site a competent superintendent satisfactory to DISTRICT. Before commencing the work herein, CONTRACTOR shall give written notice to DISTRICT and ARCHITECT of the name, qualifications and experience of such superintendent. If Superintendent is found unsatisfactory by DISTRICT, CONTRACTOR shall replace the Superintendent with one acceptable to the DISTRICT. Superintendent shall not be changed except with written consent of DISTRICT, unless a superintendent proves to be unsatisfactory to CONTRACTOR and ceases to be in its employ, in which case, CONTRACTOR shall notify DISTRICT and ARCHITECT in writing and replace said Superintendent with one acceptable to the DISTRICT. Superintendent shall represent CONTRACTOR and all directions given to Superintendent shall be as binding as if given to CONTRACTOR.

(b) CONTRACTOR shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Project Documents. CONTRACTOR shall carefully study and compare all plans, drawings, specifications, and other instructions and shall at once report to ARCHITECT any error, inconsistency or omission which CONTRACTOR or its employees may discover. The CONTRACTOR represents itself to DISTRICT as a skilled, knowledgeable, and experienced CONTRACTOR. The CONTRACTOR shall carefully study and compare the Project Documents with each other, and shall at once report to the ARCHITECT any errors, inconsistencies, or omissions discovered. The CONTRACTOR shall be liable to the DISTRICT for damage resulting from errors, inconsistencies, or omissions in the Project Documents that the CONTRACTOR recognized and which CONTRACTOR knowingly failed to report and which a similarly skilled, knowledgeable, and experienced contractor would have discovered.

(c) The CONTRACTOR shall verify all indicated dimensions before ordering materials or equipment, or before performing work. The CONTRACTOR shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the CONTRACTOR with the Project Documents before commencing work. Errors, inconsistencies or omissions discovered shall be reported to the DISTRICT at once. Upon commencement of any item of work, the CONTRACTOR shall be responsible for dimensions related to such item of work and shall make any corrections necessary to make work properly fit at no additional cost to DISTRICT. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to subcontractors or agents.

(d) Omissions from the plans, drawings or specifications, or the misdescription of details of work which are manifestly necessary to carry out the intent of the plans, drawings and specifications, or which are customarily performed, shall not relieve the CONTRACTOR from performing such omitted or misdescribed work, but they shall be performed as if fully and correctly set forth and described in the plans, drawings and specifications.

(e) The CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The CONTRACTOR shall be responsible to see that the finished work complies accurately with the Project Documents.

ARTICLE 5. SUBCONTRACTORS

(a) CONTRACTOR agrees to bind every subcontractor by terms of the Project Documents as far as such terms are applicable to subcontractor's work. If CONTRACTOR shall subcontract any part of the work, CONTRACTOR shall be as fully responsible to DISTRICT for acts and omissions of any subcontractor and of persons either directly or indirectly employed by any subcontractor, as it is for acts and omissions of persons directly employed by CONTRACTOR. Nothing contained in Project Documents shall create any contractual relation between any subcontractor and DISTRICT, nor shall the contract documents be construed to be for the benefit of any subcontractor.

(b) DISTRICT's consent to any subcontractor shall not in any way relieve CONTRACTOR of any obligations under the Project Documents and no such consent shall be deemed to waive any provision of any Project Document.

(c) CONTRACTOR must submit with its bid, a Designation of Subcontractors pursuant to the Subletting and Subcontracting Fair Practices Act. If CONTRACTOR specifies more than one subcontractor for the same portion of work or fails to specify a subcontractor, and such portion of the work exceeds one-half of one percent of the total bid, CONTRACTOR agrees that it is fully qualified to perform and shall perform such work itself, unless CONTRACTOR provides for substitution or addition of subcontractors. Substitution or addition of subcontractors shall be permitted only as authorized under the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et. seq.

(d) In accordance with Business and Professions Code Section 7059, if CONTRACTOR is designated as a "specialty contractor" (as defined in Section 7058 of the Public Contract Code), all of the work to be performed outside of the CONTRACTOR's license specialty shall be performed by a licensed subcontractor in compliance with the Subletting and Subcontracting Fair Practices Act, Public Contract Code Section 4100, et seq.

(e) A copy of each subcontract, if in writing, or, if not in writing, then a written statement signed by the CONTRACTOR giving the name of the subcontractor and the terms and conditions of such subcontract, shall be filed with the DISTRICT before the subcontractor begins work. Each subcontract shall contain a reference to the Agreement between the DISTRICT and the CONTRACTOR and the terms of that Agreement and all parts of the Project Documents shall be made a part of such subcontract insofar as applicable to the work covered thereby. Each subcontract will provide for termination in accordance with Article 13 of these General Conditions. Each subcontract shall provide for its annulment by the CONTRACTOR at the order of the ARCHITECT if in the ARCHITECT'S opinion the subcontractor fails to comply with the requirements of the

Project Documents insofar as the same may be applicable to this work. Nothing herein contained shall relieve the CONTRACTOR of any liability or obligation hereunder.

ARTICLE 6. PROHIBITED INTERESTS

No official of DISTRICT who is authorized in such capacity and on behalf of DISTRICT to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with construction of the Project, shall become directly or indirectly interested financially in this Project or in any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for DISTRICT who is authorized in such capacity and on behalf of DISTRICT to exercise any executive, supervisory or other similar functions in connection with construction of Project shall become directly or indirectly interested financially in this Project or in any part thereof. CONTRACTOR shall receive no compensation and shall repay DISTRICT for any compensation received by CONTRACTOR hereunder, should CONTRACTOR aid, abet or knowingly participate in violation of this Article 6.

ARTICLE 7. DISTRICT'S INSPECTOR

- (a) One or more Inspector(s), including special inspectors, as required, will be employed by DISTRICT and will be assigned to the Project.
- (b) No work shall be performed by the CONTRACTOR solely upon the instructions or comments by the Inspector. The Inspector has no authority to interpret the Project Documents or order extra work and any extra work performed without the written instruction of the DISTRICT shall be at CONTRACTOR's sole cost and expense and there will be no delay damages incurred by DISTRICT for such work.
- (c) No work shall be carried on except with the knowledge and under the inspection of said Inspector(s). He/she shall have free access to any or all parts of work at any time. CONTRACTOR shall furnish Inspector reasonable opportunities for obtaining such information as may be necessary to keep Inspector fully informed respecting progress and manner of work and character of materials. Inspection of work shall not relieve CONTRACTOR from any obligation to fulfill the Project Documents. Inspector or ARCHITECT shall have authority to stop work whenever provisions of Project Documents are not being complied with and such noncompliance is discovered. CONTRACTOR shall instruct its employees accordingly.
- (d) CONTRACTOR understands and agrees that the Inspector for the Project may also serve concurrently as inspector for other DISTRICT projects and may not therefore be available on site during the entire work day. It shall be the responsibility of CONTRACTOR to notify the Inspector not less than twenty-four (24) hours in advance of materials and equipment deliveries and required inspections.

ARTICLE 8. ARCHITECT'S STATUS

- (a) The ARCHITECT shall be the DISTRICT's representative during construction and shall observe the progress and quality of the work on behalf of the DISTRICT. ARCHITECT shall have the authority to act on behalf of DISTRICT only to the extent expressly provided in the Project Documents. ARCHITECT shall have authority to stop work whenever such stoppage may be necessary in ARCHITECT'S reasonable opinion to ensure the proper execution of the Project Documents.
- (b) The ARCHITECT shall be, in the first instance, the judge of the performance of the work. ARCHITECT shall exercise authority under the Project Documents to enforce CONTRACTOR's faithful performance.
- (c) The ARCHITECT shall have all authority and responsibility established by law. The ARCHITECT has the authority to enforce compliance with the Project Documents and the CONTRACTOR shall promptly comply with instructions from the ARCHITECT or an authorized representative of the ARCHITECT.
- (d) On all questions related to the quantities, the acceptability of material, equipment or workmanship, the execution, progress or sequence of work, the interpretation of plans, specifications or drawings, and the acceptable performance of the CONTRACTOR pursuant to the decision of the ARCHITECT shall govern and shall be precedent to any payment unless otherwise ordered by the Governing Board. The progress and completion of the work shall not be impaired or delayed by virtue of any question or dispute arising out of or related to the foregoing matters and the instructions of the ARCHITECT relating thereto.
- (e) General supervision and direction of the work by the ARCHITECT shall in no way imply that the ARCHITECT or his or her representatives are in any way responsible for the safety of the CONTRACTOR or its employees or that the ARCHITECT or his or her representatives will maintain supervision over the CONTRACTOR's construction methods or personnel other than to ensure that the quality of the finished work is in accordance with the Project Documents.

ARTICLE 9. NOTICE OF TAXABLE POSSESSORY INTEREST

The terms of the Agreement may result in the creation of a possessory interest. If such a possessory interest is vested in a private party to the Agreement, the private party may be subjected to the payment of property taxes levied on such interest.

ARTICLE 10. ASSIGNMENT OF ANTITRUST ACTIONS

Public Contract Code Section 7103.5 provides:

In entering into a public works contract or a subcontract to supply goods, services, or materials pursuant to a public works contract, the

contractor or subcontractor offers and agrees to assign to the awarding body (DISTRICT) all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.

CONTRACTOR, for itself and all subcontractors, agrees to assign to DISTRICT all rights, title, and interest in and to all such causes of action CONTRACTOR and all subcontractors may have under the Agreement. This assignment shall become effective at the time DISTRICT tenders final payment to the CONTRACTOR, and CONTRACTOR shall require assignments from all subcontractors to comply herewith.

ARTICLE 11. OTHER CONTRACTS

(a) DISTRICT reserves the right to let other contracts in connection with this work. CONTRACTOR shall afford other contractors reasonable opportunity for introduction and storage of their materials and execution of their work and shall properly connect and coordinate its work with such other contractors.

(b) If any part of CONTRACTOR's work depends for proper execution or results upon work of any other contractor, the CONTRACTOR shall inspect and promptly report to ARCHITECT in writing any defects in such work that render it unsuitable for such proper execution and results. CONTRACTOR will be held accountable for damages to DISTRICT for that work which it failed to inspect or should have inspected. CONTRACTOR's failure to inspect and report shall constitute its acceptance of other contractor's work as fit and proper for reception of its work, except as to defects which may develop in other contractors' work after execution of CONTRACTOR's work.

(c) To ensure proper execution of its subsequent work, CONTRACTOR shall measure and inspect work already in place and shall at once report to the ARCHITECT in writing any discrepancy between executed work and Project Documents.

(d) CONTRACTOR shall ascertain to its own satisfaction the scope of the Project and nature of any other contracts that have been or may be awarded by DISTRICT in prosecution of the Project to the end that CONTRACTOR may perform this Agreement in the light of such other contracts, if any.

(e) Nothing herein contained shall be interpreted as granting to CONTRACTOR exclusive occupancy at site of Project. CONTRACTOR shall not cause any unnecessary hindrance or delay to any other contractor working on Project. If simultaneous execution of any contract for Project is likely to cause interference with performance of some other

contract or contracts, DISTRICT shall decide which contractor shall cease work temporarily and which contractor shall continue or whether work can be coordinated so that contractors may proceed simultaneously.

(f) DISTRICT shall not be responsible for any damages suffered or extra costs incurred by CONTRACTOR resulting directly or indirectly from award or performance or attempted performance of any other contract or contracts on Project, or caused by any decision or omission of DISTRICT respecting the order of precedence in performance of contracts.

ARTICLE 12. OCCUPANCY

DISTRICT reserves the right to occupy buildings and/or portions of the site at any time before completion, and such occupancy shall not constitute final acceptance of any part of work covered by this Agreement, nor shall such occupancy extend the date specified for completion of the work. Beneficial occupancy of building(s) does not commence any warranty period nor shall it entitle CONTRACTOR to any additional compensation due to such occupancy.

ARTICLE 13. DISTRICT'S RIGHT TO TERMINATE AGREEMENT

(a) Termination for Cause. If the CONTRACTOR refuses or fails to complete the work or any separable part thereof with such diligence as will insure its completion within the time specified or any extension thereof, or fails to complete said work within such time, or if the CONTRACTOR should file a petition for relief as a debtor, or should relief be ordered against CONTRACTOR as a debtor under Title 11 of the United States Code, or if CONTRACTOR 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 should refuse or should fail to supply enough properly skilled workers or proper equipment, tools, and materials in the necessary quantity and quality to complete the work in the time specified, or if CONTRACTOR should fail to make prompt payment to subcontractors for materials or labor, or disregard laws or ordinances or instructions of DISTRICT, or if CONTRACTOR or its subcontractors should otherwise be guilty of a violation of any provision of this Agreement, then CONTRACTOR shall be deemed to be in default of the Agreement and DISTRICT may, without prejudice to any other right or remedy, serve written notice upon CONTRACTOR and its surety of DISTRICT's intention to terminate this Agreement, such notice to contain the reasons for such intention to terminate, and unless within ten (10) calendar days after the service of such notice such condition shall cease or such violation shall cease, or arrangements satisfactory to DISTRICT for the correction thereof be made and corrective action commenced in a diligent and workmanlike manner and pursued to satisfactory completion, this Agreement shall upon the expiration of said ten (10) calendar days, cease and terminate. In such case, CONTRACTOR shall be excluded from the worksite and not be entitled to receive any further payment until work is finished to DISTRICT's satisfaction.

(b) In the event of any such termination, surety shall have the right to take over and perform this Agreement, provided, however, that if surety within five (5) calendar days after service upon it of said notice of termination does not give DISTRICT written notice of its intention to take over and perform this Agreement or does not commence performance thereof within ten (10) calendar days after date of serving such notice of termination by DISTRICT on surety, DISTRICT may take over the work and prosecute same to completion by any means determined by DISTRICT including hiring another contractor for the account and at the expense of CONTRACTOR, and CONTRACTOR and its surety shall be liable to DISTRICT for any excess cost or other damages occasioned by the DISTRICT thereby. Time is of the essence in this Agreement. If the DISTRICT takes over the work as hereinabove provided, the DISTRICT may, without liability for so doing, take possession of and utilize in completing the work such materials, supplies, equipment and other property belonging to the CONTRACTOR as may be on the site of the work and necessary therefore.

(c) The expense of finishing the work, including compensation for additional architectural, managerial, and administrative services, shall be a charge against CONTRACTOR and CONTRACTOR agrees that the charge may be deducted from any money due or becoming due to CONTRACTOR from DISTRICT or CONTRACTOR shall pay the charge to the DISTRICT. Expense incurred by DISTRICT as herein provided, and damage incurred through CONTRACTOR's default, shall be certified to DISTRICT by ARCHITECT. The surety shall become liable for payment should CONTRACTOR fail to pay in full any cost incurred by the DISTRICT.

(d) Nonappropriation of Funds/Insufficient Funds. In the event that sufficient funds are not appropriated to complete the Project or the DISTRICT determines that sufficient funds are not available to complete the Project, DISTRICT may terminate or suspend the completion of the Project at any time by giving written notice to the CONTRACTOR. In the event that the DISTRICT exercises this option, the DISTRICT shall pay for any and all work and materials completed or delivered onto the site, and the value of any and all work then in progress and orders actually placed which cannot be canceled up to the date of notice of termination. The value of work and materials paid for shall include a factor of fifteen percent (15%) for the CONTRACTOR's overhead and profit and there shall be no other costs or expenses paid to CONTRACTOR. All work, materials and orders paid for pursuant to this provision shall become the property of the DISTRICT. DISTRICT may, without cause, order CONTRACTOR in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as DISTRICT may determine. Adjustment shall be made for increases in the cost of performance of the Agreement caused by suspense, delay or interruption.

(e) The foregoing provisions are in addition to and not a limitation of any other rights or remedies available to the DISTRICT.

ARTICLE 14. BONDS

Unless otherwise specified in Special Conditions, CONTRACTOR shall furnish a surety bond in an amount equal to one hundred percent (100%) of contract price as security for faithful performance of this Agreement and shall furnish a separate bond in an amount of one hundred percent (100%) of the contract price as security for payment to persons performing labor and furnishing materials in connection with this Project. Bonds shall be in the form set forth in these Project Documents.

ARTICLE 15. SUBSTITUTION OF SECURITIES

(a) Pursuant to the requirements of Public Contract Code Section 22300, upon CONTRACTOR's request, DISTRICT will make payment to CONTRACTOR of any earned retention funds withheld from payments under this Agreement if CONTRACTOR deposits with the DISTRICT or in escrow with a California or federally chartered bank acceptable to DISTRICT, securities eligible for the investment pursuant to Government Code Section 16430 or bank or savings and loan certificates of deposit, upon the following conditions:

(1) CONTRACTOR shall be the beneficial owner of any securities substituted for retention funds withheld and shall receive any interest thereon.

(2) All expenses relating to the substitution of securities under said Section 22300 and under this Article 15, including, but not limited to DISTRICT's overhead and administrative expenses, and expenses of escrow agent shall be the responsibility of the CONTRACTOR.

(3) If CONTRACTOR shall choose to enter into an escrow agreement, such agreement shall be in the form as set forth in Public Contract Code section 22300(f) attached hereto as part of the Project Documents and which shall allow for the conversion to cash to provide funds to meet defaults by the CONTRACTOR including, but not limited to, termination of the CONTRACTOR's control over the work, stop notices filed pursuant to law, assessment of liquidated damages or amount to be kept or retained under the provisions of the Project Documents.

(4) Securities, if any, shall be returned to CONTRACTOR only upon satisfactory completion of the Agreement.

(b) To minimize the expense caused by such substitution of securities, CONTRACTOR shall, prior to or at the time CONTRACTOR requests to substitute security, deposit sufficient security to cover the entire amount to be then withheld and to be withheld under the General Conditions of this Agreement . Should the value of such substituted security at any time fall below the amount for which it was substituted, or any other amount which the DISTRICT determines to withhold, CONTRACTOR shall immediately, and at CONTRACTOR's expense, deposit additional security qualifying

under said Section 22300 until the total security deposited is no less than equivalent to the amount subject to withholding under the Agreement.

(c) In the alternative, under Section 22300, CONTRACTOR, at its own expense, may request DISTRICT to make payment of earned retention funds directly to the escrow agent. Also at the expense of CONTRACTOR, CONTRACTOR may direct investment of the payments into securities, and CONTRACTOR shall receive the interest earned on the investment upon the same conditions as shown in paragraph (a) for securities deposited by CONTRACTOR. Upon satisfactory completion of the Agreement, CONTRACTOR shall receive from the escrow agent all securities, interest and payments received by the escrow agent from DISTRICT, pursuant to the terms of Section 22300.

(d) If any provision of this Article 15 shall be found to be illegal or unenforceable, then, notwithstanding, this Article 15 shall remain in full force and effect, and such provision shall be deemed stricken.

ARTICLE 16. FIRE INSURANCE

CONTRACTOR will procure at CONTRACTOR's own expense, and before commencement of any work under this Agreement, fire insurance on the Project. Amount of fire insurance shall be sufficient to protect against loss or damage in full until work is accepted by DISTRICT. CONTRACTOR shall submit proof of insurance and shall provide endorsements on forms provided by the DISTRICT or on forms approved by the DISTRICT.

ARTICLE 17. PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE

(a) CONTRACTOR shall take out and maintain during the life of this Agreement such public liability and property damage insurance as shall protect CONTRACTOR and DISTRICT from all claims for personal injury, including accidental death, to any person (including, as to DISTRICT, injury or death to CONTRACTOR's or subcontractor's employees), as well as from all claims for property damage arising from operations under this Agreement, in amounts as set forth in the Agreement.

(b) CONTRACTOR shall require its subcontractors, if any, to take out and maintain similar public liability and property damage insurance in like amounts or insure the activities of its subcontractors in CONTRACTOR's own policy.

(c) CONTRACTOR, during the progress of the work and until final acceptance of the work by DISTRICT upon completion of the entire Agreement, shall maintain Builder's Risk/ "All Risk," course-of-construction insurance in an amount not less than as set forth in the Agreement. Coverage is to provide extended coverage and insurance against vandalism, malicious mischief, perils of fire, sprinkler leakage, civil authority, sonic boom, earthquake, collapse, flood, wind, lightning, smoke, riot, debris removal (including demolition), and reasonable compensation for ARCHITECT's services and expenses required as a result of such insured loss upon the entire work which is the subject of the

Project Documents, including completed work and work in progress to the full insurable amount thereof. The risk of damage to the work due to the perils covered by the Builder's Risk/"All Risk" Insurance, as well as any other hazards which might result in damage to the work, is that of CONTRACTOR and the surety, and no claims for such loss or damage shall be recognized by DISTRICT nor will such loss or damage excuse the complete and satisfactory performance of the Agreement by CONTRACTOR.

(d) CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such insurance shall be issued by admitted surety insurers under the same conditions as required for bonds on the Project.

ARTICLE 18. WORKERS' COMPENSATION INSURANCE

(a) In accordance with the provisions of Section 3700 of the Labor Code, the CONTRACTOR and every subcontractor shall be required to secure the payment of compensation to its employees.

(b) The CONTRACTOR shall provide, during the life of the Agreement, workers' compensation insurance for all of its employees engaged in work under this Agreement, on or at the site of the Project, and, in case any of its work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide workers' compensation insurance for all the latter's employees. Any class of employee or employees not covered by a subcontractor's insurance shall be covered by the CONTRACTOR's insurance. In case any class of employees engaged in work under this Agreement, on or at the site of the Project, is not protected under the workers' compensation statute, the CONTRACTOR shall provide or shall cause a subcontractor to provide, adequate insurance coverage for the protection of such employees not otherwise protected before subcontractor commences work. The CONTRACTOR shall file with the DISTRICT certificates of its insurance protecting workers and a thirty (30) day notice shall be provided to DISTRICT before the cancellation or reduction of any policy of CONTRACTOR or subcontractor. CONTRACTOR shall submit proof of insurance and shall provide endorsements on the forms provided by the DISTRICT or on forms approved by the DISTRICT. Such endorsements shall be submitted concurrently with the Project Documents.

ARTICLE 19. PROOF OF CARRIAGE OF INSURANCE

(a) CONTRACTOR shall not commence work nor shall it allow any subcontractor to commence work under this Agreement until all required insurance certificates and endorsements from admitted surety insurers have been obtained and delivered in duplicate to and approved by DISTRICT. Such insurance shall be issued by admitted surety insurers under the same conditions as required for bonds on the Project. CONTRACTOR shall provide proof of insurance on DISTRICT approved forms without revisions.

(b) Certificates and insurance policies shall include the following:

(1) A clause stating:

"This policy shall not be canceled or reduced in required limits of liability or amount of insurance until notice has been mailed to DISTRICT stating date of cancellation or reduction. Date of cancellation or reduction may not be less than thirty (30) days after date of mailing notice."

(2) Language stating in particular those insured, extent of insurance, location and operation to which insurance applies, expiration date, to whom cancellation and reduction notice will be sent, and length of notice period.

(3) Statement that the DISTRICT is an additional insured under the policy described and that such insurance policy shall be primary to any insurance or self-insurance maintained by the DISTRICT.

(c) In case of CONTRACTOR's failure to provide insurance as required by the Agreement, the DISTRICT may, at DISTRICT's option, take out and maintain at the expense of the CONTRACTOR, such insurance in the name of CONTRACTOR, or subcontractor, as the DISTRICT may deem proper and may deduct the cost of taking out and maintaining such insurance from any sums which are due or to become due to the CONTRACTOR under this Agreement.

ARTICLE 20. DRAWINGS AND SPECIFICATIONS

(a) Drawings and Specifications are intended to delineate and describe the Project and its component parts to such a degree as will enable skilled and competent contractors to intelligently bid upon the work, and to carry said work to a successful conclusion.

(b) Drawings and Specifications are intended to comply with all laws, ordinances, rules and regulations of constituted authorities having jurisdiction, and where referred to in the Project Documents, said laws, ordinances, rules and regulations shall be considered as a part of the Agreement within the limits specified. The CONTRACTOR shall bear all expenses of correcting work done contrary to said laws, ordinances, rules and regulations and if the CONTRACTOR performed same (1) without first consulting the ARCHITECT for further instructions regarding said work, or (2) disregarded the ARCHITECT'S instructions regarding said work.

(c) Questions regarding interpretation of drawings and specifications shall be clarified by the ARCHITECT. Before commencing any portion of the work, CONTRACTOR shall carefully examine all drawings and specifications and other information given to CONTRACTOR. CONTRACTOR shall immediately notify ARCHITECT and DISTRICT in writing of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the drawings and specifications. If CONTRACTOR or its subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any work under the Project Documents, which it knows or should have known to be in error, inconsistent, or

ambiguous, or not sufficiently detailed or explained, CONTRACTOR shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof. In the event ARCHITECT determines that CONTRACTOR's requests for clarification or interpretation are not justified or do not reflect adequate competent supervision or knowledge by the CONTRACTOR or his/her subcontractors, CONTRACTOR shall be required to pay ARCHITECT's reasonable and customary fees in processing and responding to such requests. Should the CONTRACTOR commence work or any part thereof without seeking clarification, CONTRACTOR waives any claim for extra work or damages as a result of any ambiguity, conflict or lack of information.

(d) Figured dimensions on drawings shall govern, but work not dimensioned shall be as directed. Work not particularly shown or specified shall be the same as similar parts that are shown or specified. Large scale drawings shall take precedence over smaller scale drawings as to shape and details of construction. Specifications shall govern as to materials, workmanship, and installation procedures. Drawings and specifications are intended to be fully cooperative and to agree. If CONTRACTOR observes that drawings and specifications are in conflict, CONTRACTOR shall promptly notify the ARCHITECT in writing, and any necessary changes shall be adjusted as provided in the Article entitled "Changes and Extra Work;" provided, however, that the specification calling for the higher quality material or workmanship shall prevail without additional cost to DISTRICT.

(e) Materials or work described in words which so applied has a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

(f) It is not the intention of the Agreement to go into detailed descriptions of any materials and/or methods commonly known to the trade under "trade name" or "trade term." The mere mention or notation of such "trade name" or "trade term" shall be considered a sufficient notice to CONTRACTOR that it will be required to complete the work so named with all its incidental and accessory items according to the best practices of the trade.

(g) The naming of any material and/or equipment shall mean furnishing and installing of same, including all incidental and accessory items thereto and/or labor necessary to achieve full and complete functioning of the material and/or equipment as per best practices of the trade(s) involved, unless specifically noted otherwise.

(h) ARCHITECT will furnish to CONTRACTOR one (1) complete set of blue-line prints for posting of changes. Additional blue-line prints shall be provided by ARCHITECT upon payment by CONTRACTOR. During the construction period, CONTRACTOR shall maintain the set of blue-line prints in a satisfactory record condition, and shall thoroughly and neatly post, as they occur, all additions, deletions, corrections and/or revisions in the actual construction of the Project. The record drawings must be posted monthly and be current prior to each submission of each certificate of payment.

ARTICLE 21. OWNERSHIP OF DRAWINGS

All plans, drawings, designs, specifications, and other incidental architectural and engineering work or materials and other Project Documents and copies thereof furnished by DISTRICT are DISTRICT'S property. They are not to be used in other work and are to be returned to DISTRICT on request at completion of work, and may be used by DISTRICT as it may require, without any additional costs to DISTRICT.

ARTICLE 22. DETAIL DRAWINGS AND INSTRUCTIONS

(a) In case of ambiguity, conflict, or lack of information, ARCHITECT shall furnish additional instructions by means of drawings or otherwise, necessary for proper execution of work. All such drawings and instructions shall be consistent with Project Documents, true developments thereof, and reasonably inferable therefrom. Such additional instructions shall be furnished with reasonable promptness, provided that CONTRACTOR informs the ARCHITECT of the relationship of the request to the critical path of construction.

(b) Work shall be executed in conformity therewith and CONTRACTOR shall do no work without proper drawings and instructions.

(c) The ARCHITECT will furnish necessary additional details to more fully explain the work, which details shall be considered as part of the Project Documents.

(d) Should any details be more elaborate, in the opinion of the CONTRACTOR, than scale drawings and specifications warrant, CONTRACTOR shall give written notice thereof to the ARCHITECT within five (5) days of the receipt of same. In case no notice is given to the ARCHITECT within five (5) days, it will be assumed the details are reasonable development of the scale drawings. In case notice is given, then it will be considered, and if found justified, the ARCHITECT will either modify the drawings or shall recommend to DISTRICT a change order for the extra work involved.

(e) All parts of the described and shown construction shall be of the best quality of their respective kinds and the CONTRACTOR is hereby advised to use all diligence to become fully involved as to the required construction and finish, and in no case to proceed with the different parts of the work without obtaining first from the ARCHITECT such directions and/or drawings as may be necessary for the proper performance of the work.

(f) If it is found at any time, before or after completion of the work, that the CONTRACTOR has varied from the drawings and/or specifications, in materials, quality, form or finish, or in the amount or value of the materials and labor used, the ARCHITECT shall make a recommendation: (1) that all such improper work should be removed, remade and replaced, and all work disturbed by these changes be made good at the CONTRACTOR's expense; or (2) that the DISTRICT deduct from any amount due CONTRACTOR, the sum of money equivalent to the difference in value between the work performed and that called for by the drawings and specifications. ARCHITECT shall

determine such difference in value. The DISTRICT, at its option, may pursue either recommendation made by the ARCHITECT.

ARTICLE 23. SHOP DRAWINGS

(a) CONTRACTOR shall check and verify all field measurements and shall submit to ARCHITECT within ____ () calendar days of the date specified on the Notice to Proceed ____ () copies, checked and approved by CONTRACTOR, of all shop or setting list drawings, schedules, and materials list required for the work of various trades. ARCHITECT shall review such drawings, schedules and materials list only for conformance with design concept of Project and compliance with information given in Project Documents, and return as approved or disapproved with guidance as to required corrections within ____ () calendar days. CONTRACTOR shall make any corrections required by ARCHITECT, file three (3) corrected copies with ARCHITECT, and furnish such other copies as may be needed for construction within ____ () calendar days. ARCHITECT'S approval of such drawings, schedules, or materials list shall not relieve CONTRACTOR from responsibility for deviations unless CONTRACTOR has in writing called ARCHITECT'S attention to such deviations at time of submission and secured ARCHITECT'S written approval, nor shall it relieve CONTRACTOR from responsibility for errors in shop drawings or schedules.

(b) All submittals of shop drawings, catalog cuts, data sheets, schedules and material lists shall be complete and shall conform to contract drawings and specifications.

(c) The term "shop drawing" as used herein shall be understood to include, but not be limited to, detail design calculations, fabrication and installation drawings, lists, graphs and operating instructions.

(d) Shop drawings shall be submitted at a time sufficiently early to allow review of same by the Division of State Architect (DSA) if required, and the ARCHITECT, and to accommodate the rate of construction progress required under the Project Documents. CONTRACTOR will be required to pay ARCHITECT's reasonable and customary fees in order to expedite review of shop drawings which are not submitted in a timely fashion.

(e) All shop drawing submittals shall be accompanied by an accurately completed transmittal form using the format bound herein. Any shop drawing submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal. The CONTRACTOR may authorize a material or equipment supplier to deal directly with the ARCHITECT with regard to shop drawings, however, ultimate responsibility for the accuracy and completeness of the information contained in the submittal shall remain with the CONTRACTOR.

(f) Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of shop drawings on various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that

expediency indicates review of the group or package as a whole. At its option, the CONTRACTOR or Supplier may obtain from the ARCHITECT quantities of the shop drawing transmittal form at reproduction cost.

(g) CONTRACTOR's review and approval of shop drawings shall include the following stamp:

"The CONTRACTOR has reviewed and approved not only the field dimensions but the construction criteria and has also made written notation regarding any information in the shop drawings that does not conform to the Project Documents. This shop drawing has been coordinated with all other shop drawings received to date by CONTRACTOR and this duty of coordination has not been delegated to subcontractors, material suppliers, the ARCHITECT, or the engineers on this project.

Signature of CONTRACTOR"

(h) Within _____ () calendar days after receipt of shop drawings, the ARCHITECT will return one or more prints of each drawing to CONTRACTOR with his or her comments noted thereon. The CONTRACTOR shall make a complete and acceptable submittal to the ARCHITECT by the second submission of drawings. The DISTRICT shall withhold funds due the CONTRACTOR to cover additional costs of the ARCHITECT'S review beyond the second submission and any other costs incurred by DISTRICT.

(i) If prints of the shop drawing are returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN," formal revision of said drawing will not be required. If prints of the drawing are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED," formal resubmittal of said drawings will not be required. If prints of the drawing are returned to the CONTRACTOR marked "REVISE AND RESUBMIT," the CONTRACTOR shall revise said drawing and shall resubmit six (6) copies of the revised drawing to the ARCHITECT. If prints of the drawing are returned to the CONTRACTOR marked "REJECTED RESUBMIT," the CONTRACTOR shall resubmit six (6) new copies of the drawing to the ARCHITECT.

(j) Fabrication of an item shall not be commenced before the ARCHITECT has reviewed the pertinent shop drawings and returned copies to the CONTRACTOR marked with "NO EXCEPTIONS TAKEN," or "MAKE CORRECTIONS NOTED." Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Project Documents and shall not be taken as the basis of claims for extra work. The review of such drawings by the ARCHITECT will be limited to checking for general agreement with the Project Documents, and shall in no way relieve the CONTRACTOR of responsibility for errors or omissions contained therein, nor shall such

review operate to waive or modify any provision contained in the Project Documents. Fabricating dimensions, quantities of material, applicable code requirements, and other contract requirements shall be the CONTRACTOR's responsibility.

(k) No work represented by required shop drawings shall be purchased or commenced until the applicable submittal has been approved. The work shall conform to the approved shop drawings and all other requirements of the Project Documents. The CONTRACTOR shall not proceed with any related work which may be affected by the work covered under shop drawings until the applicable shop drawings have been approved, particularly where piping, machinery, and equipment and the required arrangements and clearances are involved.

(l) Except where the preparation of a shop drawing is dependent upon the approval of a prior shop drawing, all shop drawings pertaining to the same class or portion of the work shall be submitted simultaneously.

(m) Calculations of a structural nature must be approved by the Division of State Architect.

(n) THE CONTRACTOR SHALL HAVE NO CLAIM FOR DAMAGES OR EXTENSION OF TIME DUE TO ANY DELAY RESULTING FROM THE CONTRACTOR HAVING TO MAKE THE REQUIRED REVISIONS TO SHOP DRAWINGS UNLESS REVIEW BY THE ARCHITECT OF SAID DRAWINGS IS DELAYED BEYOND THE TIME PROVIDED HEREINBEFORE AND THE CONTRACTOR CAN ESTABLISH THAT THE ARCHITECT'S DELAY IN REVIEW ACTUALLY RESULTED IN A DELAY IN THE CONTRACTOR CONSTRUCTION SCHEDULE. CONTRACTOR SHALL NOT BE ENTITLED TO ANY CLAIM FOR DAMAGES RESULTING FROM DSA REVIEW EXTENDING BEYOND FIFTEEN (15) CALENDAR DAYS AFTER SUBMITTAL. HOWEVER, DISTRICT MAY CONSIDER AN EXTENSION OF TIME DUE TO ANY DELAY CAUSED BY DSA REVIEW.

ARTICLE 24. LAYOUT AND FIELD ENGINEERING

All field engineering required for laying out of this work and establishing grades for earthwork operations shall be furnished by CONTRACTOR at its expense. Such work shall be done by a qualified civil engineer approved by the ARCHITECT. Any required "Record" drawings of site development shall be prepared by the approved civil engineer.

ARTICLE 25. SOILS INVESTIGATION REPORT

(a) When a soils investigation report has been obtained from test holes at the site, such report is available for the CONTRACTOR's use in preparing its bid and work under this Agreement. Such report shall not be part of the Agreement. Any information obtained from such report or any information given on drawings as to surface and subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate

only, is not guaranteed and does not form a part of the Agreement. CONTRACTOR is required to make a visual examination of site and must make whatever test CONTRACTOR deems appropriate to determine surface and subsurface soil conditions. If, during the course of work under this Agreement, CONTRACTOR encounters subsurface or latent conditions which differ materially from those indicated in the soils investigation report, then CONTRACTOR shall notify the DISTRICT within five (5) working days of discovery of the condition.

WARNING: DISTRICT DOES NOT WARRANT THE SOILS AT THE PROJECT SITE NOR ANY INFORMATION CONTAINED IN ANY SOILS REPORT. SOILS INVESTIGATION REPORT IS PROVIDED FOR CONTRACTOR'S INFORMATION ONLY. CONTRACTOR HAS CONDUCTED AN INDEPENDENT INVESTIGATION OF THE PROJECT SITE AND THE SOILS CONDITIONS OF THE SITE. DISTRICT DOES NOT WARRANT THE SOILS CONDITIONS OF THE SITE AND CONTRACTOR IS FULLY RESPONSIBLE TO ASCERTAIN SITE CONDITIONS FOR THE PURPOSES OF DETERMINING CONSTRUCTION MEANS AND METHODS PRIOR TO COMMENCING CONSTRUCTION.

(b) CONTRACTOR agrees that no claim against DISTRICT will be made by CONTRACTOR for damages and hereby waives any rights to damages in the event that during progress of work CONTRACTOR encounters subsurface or latent conditions at the worksite materially different from those shown on drawings or indicated in specifications.

ARTICLE 26. TESTS AND INSPECTIONS

(a) Tests and inspections will comply with California Code of Regulations and with all other laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction over the Project.

(b) If the Agreement, DISTRICT's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, CONTRACTOR shall give notice in accordance with such authority of its readiness for observation or inspection at least two (2) working days prior to being tested or covered up. If inspection is by authority other than DISTRICT, CONTRACTOR shall inform the DISTRICT's Inspector of the date fixed for such inspection. Required certificates of inspection shall be secured by CONTRACTOR. Observations by DISTRICT's Inspector shall be promptly made, and where practicable, at source of supply. If any work should be covered up without approval or consent of DISTRICT's Inspector, it must be uncovered for examination and satisfactorily reconstructed at CONTRACTOR's expense in compliance with the Agreement. Costs of tests, inspections and any materials found to be not in compliance with the Agreement shall be paid for by CONTRACTOR. Other costs for test and inspection shall be paid by the DISTRICT.

ARTICLE 27. TRENCHES

(a) CONTRACTOR shall provide adequate sheeting, shoring, and bracing, or equivalent method, for the protection of life and limb in trenches and open excavation which conform to applicable safety standards.

(b) If this Agreement involves the excavation of any trench or trenches five (5) feet or more in depth, and the Project cost is in excess of \$25,000, the CONTRACTOR shall, in advance of excavation, submit to the DISTRICT for acceptance or to whomever DISTRICT designates which may include a registered civil or structural engineer employed by the DISTRICT to whom authority to accept has been delegated, a detailed plan showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the Shoring System Standards established by the Construction Safety Orders of the Division of Industrial Safety, the plan shall be prepared by a registered civil or structural engineer employed by the CONTRACTOR, and all costs therefore shall be included in the price named in the Agreement for completion of the work as set forth in the Project Documents. In no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by CAL-OSHA and a CAL-OSHA permit for such plan delivered to the DISTRICT. Labor Code Section 6500 and 6705; Health and Safety Code Section 17922.5)

(c) If this Agreement involves the digging of trenches or excavations that extend deeper than four feet below the surface, the following shall apply pursuant to Public Contract Code section 7104:

(1) The CONTRACTOR shall promptly, and before the following conditions are disturbed, notify the DISTRICT, in writing, of any:

(i) 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.

(ii) Subsurface or latent physical conditions at the site different from those indicated.

(iii) 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.

(2) The DISTRICT 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 shall issue a change order under the procedures described in the Project Documents.

(3) In the event a dispute arises between the DISTRICT and the 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 Project Documents, but shall proceed with all the work to be performed under the Project Documents. 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.

ARTICLE 28. DOCUMENTS ON WORK

CONTRACTOR shall keep on the job site at all times one legible copy of all Project Documents, including addenda and change orders, and all approved drawings, plans, schedules and specifications. Said Documents shall be kept in good order and available to ARCHITECT, ARCHITECT's representatives, and all authorities having jurisdiction. CONTRACTOR shall be acquainted with and comply with all California Code of Regulations provisions relating to conditions on this Project.

ARTICLE 29. STATE AUDIT

Pursuant to and in accordance with the provisions of Government Code Section 8546.7, or any amendments thereto, all books, records and files of the DISTRICT, the CONTRACTOR, or any subcontractor connected with the performance of this Agreement involving the expenditure of public funds in excess of Ten Thousand Dollars (\$10,000.00), including, but not limited to, the costs of administration of the Agreement, shall be subject to the examination and audit of the State Auditor at the request of the DISTRICT or as part of any audit of the DISTRICT for a period of three (3) years after final payment is made under this Agreement .

ARTICLE 30. SUBSTITUTIONS

(a) Prior to Bid Opening. Should the bidder wish to request prior to bid opening, any substitution for the materials, process, service or equipment specified, the bidder shall submit a written request at least ten (10) working days before the bid opening date and hour. If the substituted item is acceptable, the DISTRICT will approve it in an Addendum issued to all bidders of record. Requests received less than ten (10) working days prior to bid opening will not be considered. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the project.

(b) After Bid Opening and Prior to Award of Contract. If the bidder clearly indicates in its bid that it is proposing to use an "equal" product, the brand name or trade name, if any, of a proposed substitute item shall be inserted in the space provided in the bid or shall

be otherwise clearly identified in the bid. If the bidder fails to indicate an "equal" product, its bid shall be considered as offering the material, process, service or equipment referred to by the brand name or trade name specified. It is expressly understood and agreed to by the bidder that the DISTRICT reserves the right to reject any such proposed substituted item. It is further expressly understood and agreed by bidder that in the event the DISTRICT rejects a proposed "equal" item, the bidder will then supply the material, process, service or equipment designated by brand name or trade name or a substitute therefore which meets with the approval of the DISTRICT.

With respect to all proposed substitutions of "equal" items, the bidder shall submit all pertinent and appropriate data substantiating its request for substitutions within _____ () days prior to the award of the contract. DISTRICT shall only consider substitution requests from the bidder submitting the bid for the Project. The DISTRICT is not responsible for locating or securing any information which is not included in such substantiating data. The burden of proof as to the quality or suitability of proposed substituted items shall be borne by the bidder. The DISTRICT shall be the sole judge as to the quality and suitability of proposed substituted items, and decisions of the DISTRICT shall be final and conclusive. Unless extended by the mutual agreement of the parties, the DISTRICT shall notify the successful bidder of the decision concerning the proposed substitution of "equal" items prior to the award of the contract. Also such decisions by the DISTRICT shall be in writing, and no proposed substituted item shall be deemed approved unless the DISTRICT has so indicated in writing. These time limitations shall be complied with strictly, and in no case will an extension of time for completion be granted because of the bidder's failure to request the substitution of an item at the times and in the manner set forth herein.

(c) Whenever in specifications any materials, process, service or equipment is indicated or specified by brand name, trade name, proprietary name or by name of manufacturer, such specification shall be deemed to be used for the purpose of facilitating description of material, process, service or equipment desired and shall be deemed to be followed by the words "or equal," and CONTRACTOR may, unless otherwise stated, offer any material, process, service, or equipment which shall be substantially equal or better in every respect to that so indicated or specified subject to DISTRICT or ARCHITECT approval.

(d) If material, process, service, or equipment offered by CONTRACTOR is not, in opinion of ARCHITECT, or DISTRICT, substantially equal or better in every respect to that specified, then CONTRACTOR shall furnish the material, process, service, or equipment specified. Burden of proof as to equality of any material, process, service, or equipment shall rest with CONTRACTOR. Provision authorizing submission of "or equal" substantiating data shall not in any way authorize an extension of time for performance of this Agreement nor shall DISTRICT or ARCHITECT authorize the submission of □or equal□ substantiating data within ____ () days of the filing of the Notice of Completion on the Project.

(e) In the event CONTRACTOR furnishes material, process, service or equipment other than what was specified by the DISTRICT and which has been accepted by the DISTRICT and which later is defective, then CONTRACTOR at its sole cost and expense shall furnish the DISTRICT specified material, process, service or equipment or fully replace with new the defective material process, service or equipment at DISTRICT's discretion.

(f) In the event CONTRACTOR furnishes material, process service, or equipment more expensive than that specified, difference in cost of such material, process, service, or equipment so furnished shall be borne by CONTRACTOR. Any engineering, design fees, or approval agencies' fees required to make adjustments in material or work of all trades directly or indirectly affected by the approved substituted items shall be borne entirely by CONTRACTOR. Any difference in cost between an approved substitution which is lower in cost than the originally specified item shall be refunded or credited by CONTRACTOR to DISTRICT.

(g) Price, fitness and quality being equal with regard to supplies, the District may prefer supplies grown, manufactured, or produced in California and next prefer supplies partially manufactured grown, or produced in California provided the bids of said suppliers or the prices quoted by them do not exceed by more than 5% of the lowest bids/prices quoted by out of state suppliers, the major portion of the manufacture of the supplies is not done outside of California and the public good will be served thereby. (Government Code section 4330-4334)

ARTICLE 31. SAMPLES

(a) CONTRACTOR shall furnish for approval, within thirty-five (35) calendar days following award of contract, all samples as required in specifications together with catalogs and supporting data required by ARCHITECT. This provision shall not authorize any extension of time for performance of the work. ARCHITECT shall review such samples, as to conformance with design concept of work and for compliance with information given in Project Documents and approve or disapprove same within ten (10) working days from receipt of same.

(b) Unless specified otherwise, sampling, preparation of samples and tests shall be in accordance with the latest standards of the American Society for Testing and Materials.

(c) Samples shall, upon demand of ARCHITECT or DISTRICT, be submitted for tests or examinations and considered before incorporation of same into the work. CONTRACTOR shall be solely responsible for delays due to samples not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect. Samples which are of value after testing will remain the property of the CONTRACTOR.

ARTICLE 32. PROGRESS SCHEDULE

- (a) Within five (5) calendar days after being awarded the contract, CONTRACTOR shall submit a progress schedule for DISTRICT's approval. The schedule shall indicate the beginning and completion dates of all phases of construction and shall use the "critical path method" (commonly called CPM) or equivalent scheduling methodology for the value reporting, planning and scheduling, of all work required under the Project Documents. The schedule will separately identify those milestones or events that must be completed before other portions of the work can be accomplished.
- (b) The scheduling is necessary for the DISTRICT's adequate monitoring of the progress of the work and shall be prepared in accordance with the time frame described in Article 4 of the Agreement. The DISTRICT may disapprove such a schedule and require modification to it if, in the opinion of the ARCHITECT or DISTRICT, adherence to the progress schedule will cause the work not to be completed in accordance with the Agreement. CONTRACTOR shall adhere to any such modifications required by the DISTRICT.
- (c) CONTRACTOR will exchange scheduling information with subcontractors and suppliers. CONTRACTOR will order work, equipment and materials with sufficient lead time to avoid interruption of the work.
- (d) The CONTRACTOR shall submit to DISTRICT a monthly schedule to reflect the actual sequence of the work which shall be totally separate and apart from the original progress schedule.
- (e) The CONTRACTOR shall also, if requested by the ARCHITECT or DISTRICT, provide revised schedules within ten (10) calendar days if, at any time, the ARCHITECT or DISTRICT, consider the completion date to be in jeopardy. The revised schedule shall be designed to show how the CONTRACTOR intends to accomplish the work to meet the original completion date. The form and method employed by the CONTRACTOR shall be the same as for the original progress schedule. The CONTRACTOR shall modify any portions of the schedule that become infeasible because of "activities behind schedule" or for any other valid reason. CONTRACTOR will provide documents and justification for any schedule changes. An activity that cannot be completed by its original completion date shall be deemed to be behind schedule.
- (f) CONTRACTOR shall submit a revised schedule within ten (10) consecutive calendar days of CONTRACTOR's request for any extension of time. Failure to submit such schedule will result in CONTRACTOR waiving his/her right to obtain any extension of time.
- (g) IT IS AGREED THAT THE DISTRICT OWNS THE "FLOAT" ON THIS PROJECT. IF CONTRACTOR SUBMITS A REVISED SCHEDULE SHOWING AN EARLIER COMPLETION DATE FOR THE PROJECT, DISTRICT's ACCEPTANCE OF THIS REVISED SCHEDULE SHALL NOT ENTITLE CONTRACTOR TO ANY

DELAY CLAIM OR DISRUPTION DAMAGES OR ANY OTHER DAMAGES DUE TO ANY SUCH REVISED SCHEDULE. NOTHING PROVIDED HEREIN SHALL BE CONSTRUED AS A DIRECT, INDIRECT OR IMPLICIT ACCELERATION ORDER TO THE CONTRACTOR.

(h) CONTRACTOR agrees that failure to timely submit the progress schedule, the monthly schedule or any revised progress schedule requested by the ARCHITECT or the DISTRICT may result in delay in payment to CONTRACTOR.

ARTICLE 33. MATERIALS AND WORK

(a) Except as otherwise specifically stated in this Agreement, CONTRACTOR shall provide and pay for all materials, supplies, tools, equipment, labor transportation, superintendence, temporary constructions of every nature, and all other services and facilities of every nature whatsoever necessary to execute and complete the Project within specified time.

(b) Unless otherwise specified, all materials shall be new and the best of their respective kinds and grades as noted or specified, and workmanship shall be of good quality.

(c) Materials shall be furnished in ample quantities and at such times as to insure uninterrupted progress of work and shall be stored properly and protected as required. DISTRICT has no obligation to pay for any prefabricated material stored offsite until delivered and installed to the jobsite and inspected and approved by the inspector of record.

(d) CONTRACTOR shall, after issuance of the Notice to Proceed by DISTRICT, place orders for materials and/or equipment as specified so that delivery of same may be made without delays to the work. CONTRACTOR shall, upon demand from the ARCHITECT, furnish to the ARCHITECT documentary evidence showing that orders have been placed.

(e) DISTRICT reserves the right, for any neglect in not complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the work may be completed at the date specified in the Agreement, and all expenses incidental to the procuring of said materials and/or equipment shall be paid for by the CONTRACTOR.

(f) No materials, supplies, or equipment for work under this Agreement shall be purchased subject to any chattel mortgage or under a conditional sale or other agreement by which an interest therein or in any part thereof is retained by seller or supplier. CONTRACTOR warrants good title to all material, supplies, and equipment installed or incorporated in work and agrees upon completion of all work to deliver premises, together with all improvements and appurtenances constructed or placed thereon by it, to DISTRICT free from any claims, liens, or charges. CONTRACTOR further agrees that neither it nor any person, firm, or corporation furnishing any materials or labor for any work covered by this Agreement shall have any right to lien upon premises or any

improvement or appurtenance thereon, except that CONTRACTOR may install metering devices or other equipment of utility companies or of political subdivisions, title to which is commonly retained by utility company or political subdivision. In the event of installation of any such metering device or equipment, CONTRACTOR shall advise DISTRICT as to owner thereof.

(g) Nothing contained in this Article 33, however, shall defeat or impair the rights of persons furnishing material or labor under any bond given by CONTRACTOR for their protection or any rights under any law permitting such persons to look to funds due CONTRACTOR in hand of DISTRICT, and this provision shall be inserted in all subcontracts and material contracts and notice of its provisions shall be given to all persons furnishing materials or labor when no formal contract is entered into for such materials or labor.

(h) The title to new materials and/or equipment and attendant liability for its protection and safety, shall remain in the CONTRACTOR until incorporated in the work and accepted by the DISTRICT; no part of said materials and/or equipment shall be removed from its place of onsite/offsite storage except for immediate installation in the work; and CONTRACTOR shall keep an accurate inventory of all said materials and/or equipment in a manner satisfactory to the DISTRICT or its authorized representative.

ARTICLE 34. INTEGRATION OF WORK

(a) CONTRACTOR shall do all cutting, fitting, patching, and preparation of work as required to make its several parts come together properly, and fit it to receive or be received by work of other contractors or existing conditions showing upon, or reasonably implied by, the drawings and specifications, and shall follow all directions given by the Architect.

(b) All costs caused by defective or ill-timed work shall be borne by CONTRACTOR.

(c) CONTRACTOR shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor without the written consent of the ARCHITECT. CONTRACTOR shall be solely responsible for protecting existing work on adjacent properties and shall obtain all required permits for shoring and excavations near property lines.

(d) When modifying existing work or installing new work adjacent to existing work, CONTRACTOR shall match, as closely as conditions of site and materials will allow, the finishes, textures, and colors of the original work, refinishing existing work as required, at no additional cost to DISTRICT.

(e) CONTRACTOR is aware that this Project may be split into several phases. If the Project is split into phases then CONTRACTOR has made allowances for any delays or damages which may arise from coordination with contractors for other phases. If any delays should arise from a contractor working on a different phase, CONTRACTOR's sole remedy for damages, including delay damages, shall be against the contractor who caused

such damage and not the DISTRICT. CONTRACTOR shall provide access to contractors for other phases as necessary to prevent delays and damages to contractors working on other phases of construction.

ARTICLE 35. OBTAINING OF PERMITS, LICENSES AND EASEMENTS

- (a) Permits, licenses, and certificates necessary for prosecution of work, shall be secured and paid for by CONTRACTOR, unless otherwise specified. All such permits, licenses, and certificates shall be delivered to the ARCHITECT before demand is made for the certificate of final payment. CONTRACTOR shall, and shall require subcontractors to, maintain contractors' licenses in effect as required by law.
- (b) Easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by DISTRICT, unless otherwise specified.
- (c) Permits and charges for installation, and inspection thereof, of utility services by serving utilities shall be secured and paid for by DISTRICT.

ARTICLE 36. SURVEYS

Surveys to determine location of property lines and corners will be supplied by DISTRICT. Surveys to determine locations of construction, grading, and site work, shall be provided by CONTRACTOR.

ARTICLE 37. EXISTING UTILITY LINES; REMOVAL, RESTORATION

- (a) Pursuant to Government Code Section 4215, the DISTRICT assumes the responsibility for removal, relocation, and protection of utilities located on the construction site at the time of commencement of construction under this Agreement with respect to any such utility facilities which are not identified in the plans and specifications. The CONTRACTOR shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of the DISTRICT to provide for removal or relocation of such utility facilities. If the CONTRACTOR, while performing work under this Agreement, discovers utility facilities not identified by the DISTRICT in the plans or specifications, CONTRACTOR shall immediately notify the DISTRICT and the utility in writing. CONTRACTOR shall be compensated according to the provisions governing changes in the work.
- (b) This Article 37 shall not be construed to preclude assessment against the CONTRACTOR for any other delays in completion of the work. Nothing in this Article shall be deemed to require the DISTRICT to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the construction site can be inferred from the presence of other visible facilities, such as buildings, meter junction boxes, on or adjacent to the site of the construction.

(c) As part of the work to be performed, CONTRACTOR shall provide the notices and proceed in accordance with Government Code Sections 4216.2, 4216.3 and 4216.4, and pay all fees charged pursuant to Government Code Section 4216, et seq.

ARTICLE 38. WORK TO COMPLY WITH APPLICABLE LAWS AND REGULATIONS

(a) CONTRACTOR shall give all notices and comply with all laws, ordinances, rules, and regulations applicable to the work as indicated and specified.

(b) If CONTRACTOR observes that drawings or specifications are at variance therewith, CONTRACTOR shall promptly notify ARCHITECT in writing and any changes deemed necessary by the ARCHITECT shall be adjusted as provided for changes in work. If CONTRACTOR performs any work which it knew, or through exercise of reasonable care should have known, to be contrary to such laws, ordinances, rules or regulations, and without such notice to ARCHITECT, CONTRACTOR shall bear all costs arising therefrom. Where plans, drawings or specifications state that materials, processes, or procedures must be approved by the Division of State Architect, State Fire Marshall, or other body or agency, CONTRACTOR shall be responsible for satisfying requirements of such bodies or agencies.

ARTICLE 39. ACCESS TO WORK

DISTRICT and its representatives shall at all times have access to work wherever it is in preparation or progress. CONTRACTOR shall provide safe and proper facilities for such access so that DISTRICT's representatives may perform their functions.

ARTICLE 40. PAYMENTS BY CONTRACTOR

CONTRACTOR shall pay:

(1) For all transportation and utility services not later than the 20th day of the calendar month following that in which such services are rendered;

(2) For all materials, tools, and other expendable equipment to the extent of ninety percent (90%) of cost thereof, not later than the 20th day of the calendar month following that in which such materials, tools, and equipment are delivered at site of Project and balance of cost thereof not later than the 30th day following completion of that part of work in or on which such materials, tools, and equipment are incorporated or used; and

(3) To each of its subcontractors, not later than the 5th day following each payment to CONTRACTOR the respective amounts allowed CONTRACTOR on account of work performed by respective subcontractor to the extent of such subcontractor's interest therein.

(4) Within seven (7) days from the time that all or any portion of the retentions are received by CONTRACTOR from DISTRICT, to each of its subcontractors from whom retention has been withheld, each subcontractor's share of the retention received. However, if a retention payment received by CONTRACTOR is specifically designated for a particular subcontractor, payment of the retention shall be made to the designated subcontractor, if the payment is consistent with the terms of the subcontract. CONTRACTOR may withhold from a subcontractor its portion of the retentions if a bona fide dispute exists between the subcontractor and the CONTRACTOR. The amount withheld from the retention shall not exceed one hundred fifty percent (150%) of the estimated value of the disputed amount.

ARTICLE 41. INSPECTOR'S FIELD OFFICE

CONTRACTOR shall provide for the exclusive use of Inspector a temporary field office to be located as directed by Inspector and to be maintained until removal is authorized by DISTRICT. Office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. Door shall have a key-type lock or padlock hasp. A table satisfactory for study of plans and two chairs shall be provided by CONTRACTOR. CONTRACTOR shall provide and pay for adequate electric lights, telephone service (not a pay phone), and adequate heat for the field office until authorized removal.

ARTICLE 42. UTILITIES

(a) All utilities, including but not limited to electricity, water, gas, and telephone used on work shall be furnished and paid for by CONTRACTOR. CONTRACTOR shall furnish and install necessary temporary distribution systems, including meters, if necessary, from distribution points to points on site where utility is necessary to carry on the work. When it is necessary to interrupt any existing utility service to make connections, a minimum of forty-eight (48) hours advance notice shall be given to the DISTRICT and ARCHITECT. Interruptions in utility services shall be of the shortest possible duration for the work at hand and shall be approved by the DISTRICT and the ARCHITECT. In the event any utility service is interrupted without the required forty-eight (48) hours notice, then CONTRACTOR shall be liable for all damage suffered by DISTRICT due to the interruption. Upon completion of work, CONTRACTOR shall remove all temporary distribution systems.

(b) CONTRACTOR may, with written permission of DISTRICT, use DISTRICT's existing utilities by making prearranged payments to DISTRICT for utilities used by CONTRACTOR for the Project.

ARTICLE 43. SANITARY FACILITIES

The CONTRACTOR shall provide sanitary temporary toilet facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The toilet facilities shall be maintained in a sanitary condition at all

times and shall be left at the site until removal is directed by the Inspector. Use of toilet facilities in the work under construction shall not be permitted.

ARTICLE 44. CLEANING UP

CONTRACTOR at all times shall keep work site free from debris such as waste, rubbish, and excess materials and equipment caused by this work. CONTRACTOR shall not leave debris under, in, or about the work site, but shall promptly remove same. Upon completion of work, CONTRACTOR shall clean interior and exterior of building, including fixtures, equipment, walls, floors, ceilings, roofs, window sills and ledges, horizontal projections, and any areas where debris has collected. CONTRACTOR shall clean and polish all glass, plumbing fixtures, and finish hardware and similar finish surfaces and equipment and remove temporary fencing, barricades, planking, sanitary facilities and similar temporary facilities from site. If CONTRACTOR fails to clean up, the DISTRICT shall do so and the cost thereof shall be charged to the CONTRACTOR and deducted from any progress payment due.

ARTICLE 45. PATENTS, ROYALTIES, AND INDEMNITIES

The CONTRACTOR shall hold and save the DISTRICT and its governing board, officers, agents, and employees harmless from liability of any nature or kind, including cost and expense, for or on account of any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of this Agreement, including its use by the DISTRICT, unless otherwise specifically provided in the Project Documents, and unless such liability arises from the sole negligence, or active negligence, or willful misconduct of the DISTRICT.

ARTICLE 46. GUARANTEE

(a) CONTRACTOR warrants that the work (which includes any equipment furnished by CONTRACTOR as part of the materials) shall: (a) be free from defects in workmanship and material; (b) be free from defects in any design performed by CONTRACTOR; (c) be new, and conform and perform to the requirements stated in the specifications and where detail requirements are not so stated, shall conform to applicable industry standards; and (d) be suitable for the use stated in the specifications.

(b) The warranty period for discovery of defective work shall commence on the date stamped on the Notice of Completion verifying County recordation and continue for the period set forth in the specifications or for one year if not so specified. If, during the warranty period, the work is not available for use due to defective work, such time of unavailability shall not be counted as part of the warranty period. The warranty period for corrected defective work shall continue for a duration equivalent to the original warranty period.

(c) District shall give CONTRACTOR prompt written notice after discovery of any defective work. CONTRACTOR shall correct any such defective work, as well as any

damage to any other part of the work resulting from such defective work, and provide repair, replacement, or reimbursement, at its sole expense, in a manner approved by the DISTRICT and with due diligence and dispatch as required to make the work ready for use by DISTRICT, ordinary wear and tear, unusual abuse or neglect excepted. Such corrections shall include, but not be limited to, any necessary adjustments, modifications, changes of design (unless of DISTRICT's design), removal, repair, replacement or reinstallation, and shall include all necessary parts, materials, tools, equipment, transportation charges and labor as may be necessary, and cost of removal and replacement of work shall be performed at a time and in such a manner so as to minimize the disruption to DISTRICT's use of the work.

(d) In the event of failure of CONTRACTOR or Surety to commence and pursue with diligence said repairs or replacements within ten (10) calendar days after being notified in writing, DISTRICT is hereby authorized to proceed to have defects repaired or replaced and made good at expense of CONTRACTOR and Surety who hereby agree to pay costs and charges therefore immediately on demand.

(e) If, in the opinion of the DISTRICT, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to the DISTRICT or to prevent interruption of operations of the DISTRICT, the DISTRICT will attempt to give the written notice required by this Article. If the CONTRACTOR or Surety cannot be contacted or neither complies with the DISTRICT's requirements for correction within a reasonable time as determined by the DISTRICT, the DISTRICT may, notwithstanding the provisions of this Article, proceed to make such correction or provide such attention and the costs of such correction or attention shall be charged against the CONTRACTOR and Surety. Such action by the DISTRICT will not relieve the CONTRACTOR and Surety of the guarantees provided in this Article or elsewhere in the Project Documents.

(f) This Article does not in any way limit the guarantees on any items for which a longer guarantee is specified or on any items for which a manufacturer gives a guarantee for a longer period. CONTRACTOR shall furnish to DISTRICT all appropriate guarantee or warranty certificates upon completion of the Project or upon request by DISTRICT.

(g) All guarantees required under this Article shall be in writing on the Guarantee form included in the Project Documents.

(h) CONTRACTOR shall provide to DISTRICT instruction manuals for all items which require same.

(i) Nothing herein shall limit any other rights or remedies available to DISTRICT.

(j) The DISTRICT may collect its reasonable costs and attorneys' fees in any action to enforce this Article.

ARTICLE 47. DUTY TO PROVIDE FIT WORKERS

- (a) CONTRACTOR and subcontractors shall at all times enforce strict discipline and good order among their employees and shall not employ on work any unfit person or anyone not skilled in work assigned to such person. It shall be the responsibility of CONTRACTOR to ensure compliance with this Article.
- (b) Any person in the employ of the CONTRACTOR or subcontractors whom DISTRICT or ARCHITECT may deem incompetent, unfit, troublesome or otherwise undesirable shall be excluded from the work site and shall not again be employed on it except with written consent of DISTRICT.

ARTICLE 48. WAGE RATES, TRAVEL AND SUBSISTENCE

- (a) Pursuant to the provisions of Article 2 (commencing at Section 1770), Chapter 1, Part 7, Division 2 of the Labor Code, the governing board of DISTRICT has obtained the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which this public work is to be performed for each craft, classification or type of worker needed for this Project from the Director of the Department of Industrial Relations ("Director.") These rates are on file with the Clerk of the DISTRICT's governing board and copies will be made available to any interested party on request. CONTRACTOR shall post a copy of such wage rates at the work site. Labor Code Section 1773.2. The rates are available on the Internet at www.dir.ca.gov "Statistics & Research."
- (b) Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified rate of per diem wages, unless otherwise specified. Holidays shall be defined in the Collective Bargaining Agreement applicable to each particular craft, classification or type of worker employed.
- (c) CONTRACTOR shall pay and shall cause to be paid each worker engaged in work on the Project not less than the general prevailing rate of per diem wages determined by the Director, regardless of any contractual relationship which may be alleged to exist between the CONTRACTOR or any subcontractor and such workers.
- (d) CONTRACTOR shall pay and shall cause to be paid to each worker needed to execute the work on the Project travel and subsistence payments, as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed with the Department of Industrial Relations in accordance with Labor Code Section 1773.8.
- (e) If during the period this bid is required to remain open, the Director of Industrial Relations determines that there has been a change in any prevailing rate of per diem wages in the locality in which this public work is to be performed, such change shall not alter the wage rates in the Notice Calling for Bids or the contract subsequently awarded.
- (f) Pursuant to Labor Code Section 1775, CONTRACTOR shall as a penalty to the DISTRICT, forfeit fifty dollars (\$50) for each calendar day, or portion thereof, for each

worker paid less than the prevailing rate of per diem wages, determined by the Director, for such craft or classification in which such worker is employed for any public work done under the Agreement by CONTRACTOR or by any subcontractor under it. The amount of the penalty shall be determined by the Labor Commission and shall be based on consideration of the CONTRACTOR's mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage, or the previous record of the CONTRACTOR in meeting his or her prevailing rate of per diem wage obligations, or the CONTRACTOR's willful failure to pay the correct prevailing rate of per diem wages. A mistake, inadvertence or neglect in failing to pay the correct prevailing rate of per diem wage is not excusable if the CONTRACTOR had knowledge of his or her obligations under this part. The difference between such prevailing rate of per diem wage and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the prevailing rate of per diem wage shall be paid to each worker by the CONTRACTOR.

(g) Any worker employed to perform work on the Project, which work is not covered by any craft or classification listed in the general prevailing rate of per diem wages determined by the Director shall be paid not less than the minimum rate of wages specified therein for the craft or classification which most nearly corresponds to work to be performed by them, and such minimum wage rate shall be retroactive to time of initial employment of such person in such craft or classification.

(h) Pursuant to Labor Code Section 1773.1, per diem wages are deemed to include employer payments for health and welfare, pension, vacation, travel time, and subsistence pay as provided for in Labor Code Section 1773.8.

(i) CONTRACTOR shall post at appropriate conspicuous points on the site of the Project, a schedule showing all determined minimum wage rates and all authorized deductions, if any, from unpaid wages actually earned.

ARTICLE 49. HOURS OF WORK

(a) As provided in Article 3, (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code, eight (8) hours of labor shall constitute a legal day's work. The time of service of any worker employed at any time by the CONTRACTOR or by any subcontractor on any subcontract under this Agreement upon the work or upon any part of the work contemplated by this Agreement shall be limited and restricted by the Agreement to eight (8) hours per day, and forty (40) hours during any one week, except as hereinafter provided. Notwithstanding the provisions hereinabove set forth, work performed by employees of CONTRACTOR in excess of eight (8) hours per day and forty (40) hours during any one week, shall be permitted upon this public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than one and one-half times the basic rate of pay.

(b) The CONTRACTOR shall keep and shall cause each subcontractor to keep an accurate record showing the name of and actual hours worked each calendar day and each calendar week by each worker employed by CONTRACTOR in connection with the work

or any part of the work contemplated by this Agreement. The record shall be kept open at all reasonable hours to the inspection of the DISTRICT and to the Division of Labor Standards Enforcement, Department of Industrial Relations.

(c) Pursuant to Labor Code Section 1813, the CONTRACTOR shall pay to the DISTRICT a penalty of Twenty-Five Dollars (\$25) for each worker employed in the execution of this Contract by the CONTRACTOR or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and 40 hours in any one calendar week in violation of the provisions of Article 3 (commencing at Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

(d) Any work necessary to be performed after regular working hours, or on Sundays or other holidays shall be performed without additional expense to DISTRICT.

ARTICLE 50. PAYROLL RECORDS

(a) Pursuant to the provisions of Labor Code Section 1776, the CONTRACTOR shall keep and shall cause each subcontractor performing any portion of the work under this Agreement to keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by CONTRACTOR in connection with the work.

(b) The payroll records enumerated under subdivision (a) shall be certified and shall be available for inspection at all reasonable hours at the principal office of the CONTRACTOR on the following basis:

(1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request.

(2) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection or furnished upon request to a representative of the DISTRICT, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations.

(3) A certified copy of all payroll records enumerated in subdivision (a) shall be made available for inspection upon request by the public or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been provided pursuant to paragraph (2), the requesting party shall, prior to being provided the records, reimburse the costs of preparation by the CONTRACTOR, subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the CONTRACTOR.

(4) The form of certification shall be as follows:

I, _____ (Name-print), the undersigned, am _____ (position in business) with the authority to act for and on behalf of _____ (Name of business and/or CONTRACTOR), certify under penalty of perjury that the records or copies thereof submitted and consisting of _____ (description, number of pages) are the originals or true, full and correct copies of the originals which depict the payroll record(s) of the actual disbursements by way of cash, check, or whatever form to the individual or individuals named.

Dated: _____ Signature: _____

(c) Contractor shall file a certified copy of the payroll records enumerated in subdivision (a) with the entity that requested the records within ten (10) days after receipt of a written request. In the event that the CONTRACTOR fails to comply within the 10-day period, the CONTRACTOR shall, as a penalty to the DISTRICT, forfeit Twenty-Five Dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.

(d) Any copy of payroll records made available for inspection as copies and furnished upon request to the public by the DISTRICT, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the CONTRACTOR shall not be marked or obliterated.

(e) The CONTRACTOR shall inform the DISTRICT of the location of the payroll records enumerated under subdivision (a), including the street address, city and county, and shall, within five (5) working days, provide a written notice of a change of location and address.

(f) It shall be the responsibility of the CONTRACTOR to ensure compliance with the provisions of this Article 50 and the provisions of Labor Code Section 1776.

ARTICLE 51. APPRENTICES

(a) The CONTRACTOR acknowledges and agrees that, if this Agreement involves a dollar amount greater than or a number of working days greater than that specified in Labor Code Section 1777.5, this Agreement is governed by the provisions of Labor Code Section 1777.5. It shall be the responsibility of the CONTRACTOR to ensure compliance with this Article 51 and with Labor Code Section 1777.5 for all apprenticing occupations.

(b) Apprentices of any crafts or trades may be employed and, when required by Labor Code Section 1777.5, shall be employed provided they are properly registered in full compliance with the provisions of the Labor Code.

(c) Every such apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which he or she is employed, and shall be employed only at the work of the craft or trade to which he or she is registered.

(d) Only apprentices, as defined in Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4 (commencing at Section 3070), Division 3 of the Labor Code, are eligible to be employed on public works. The employment and training of each apprenticeship shall be in accordance with the provisions of the apprenticeship standards and apprentice agreements under which he or she is training.

(e) Pursuant to Labor Code Section 1777.5, the CONTRACTOR and any subcontractors employing workers in any apprenticeship craft or trade in performing any work under this Agreement shall employ apprentices in at least the ratio set forth in Section 1777.5 and apply to the applicable joint apprenticeship committee for a certificate approving the CONTRACTOR or subcontractor under the applicable apprenticeship standards for the employment and training of apprentices.

(f) Every contractor and subcontractor shall submit contract award information to the applicable joint apprenticeship committee which shall include an estimate of journeyman hours to be performed under the Agreement, the number of apprentices to be employed and the approximate dates the apprentices will be employed.

(g) If the CONTRACTOR or subcontractor willfully fails to comply with Labor Code Section 1777.5, then, upon a determination of noncompliance by the Chief of the Division of Apprenticeship Standards, the CONTRACTOR or subcontractor shall be subject to the penalties imposed under Labor Code Section 1777.7. Interpretation and enforcement of these provisions shall be in accordance with the rules and procedures of the California Apprenticeship Council.

(h) The CONTRACTOR and all subcontractors shall comply with Labor Code Section 1777.6, which section forbids certain discriminatory practices in the employment of apprentices.

(i) CONTRACTOR shall become fully acquainted with the law regarding apprentices prior to commencement of the work. Special attention is directed to Sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and Title 8, California Code of Regulations, Section 200, et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, 8th Floor, San Francisco, California 94102, (415) 703-4920.

ARTICLE 52. LABOR - FIRST AID

The CONTRACTOR shall maintain emergency first aid treatment for CONTRACTOR's workers on the Project which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C.A., Sec. 651, et seq.).

ARTICLE 53. PROTECTION OF PERSONS AND PROPERTY

(a) The CONTRACTOR shall be responsible for all damages to persons or property that occur as a result of its fault or negligence in connection with the prosecution of this Agreement and shall take all necessary measures and be responsible for the proper care and protection of all materials delivered and work performed until completion and final acceptance by the DISTRICT. CONTRACTOR shall provide such heat, covering, and enclosures as are necessary to protect all work, materials, equipment, appliances, and tools against damage by weather conditions. All work shall be solely at the CONTRACTOR's risk with the exception of damage to the work caused by "acts of God" as defined in Public Contract Code Section 7105.

(b) CONTRACTOR shall take, and require subcontractors to take, all necessary precautions for safety of workers and shall comply with all applicable federal, state, local and other safety laws, standards, orders, rules, regulations, and building codes to prevent accidents or injury to persons on, about, or adjacent to the work site and to provide a safe and healthful place of employment. CONTRACTOR shall furnish, erect and properly maintain at all times, as directed by DISTRICT or ARCHITECT or required by conditions and progress of work, all necessary safety devices, safeguards, construction canopies, signs audible devices for protection of the blind, safety rails, belts and nets, barriers, lights, and watchmen for protection of workers and the public and shall post danger signs warning against hazards created by such features in the course of construction. CONTRACTOR shall designate a responsible employee, whose duty shall be to post information regarding protection and obligations of workers and other notices required under occupational safety and health laws, to comply with reporting and other occupational safety requirements, and to protect the life, safety and health of workers. Name and position of person so designated shall be reported in writing to DISTRICT by CONTRACTOR. CONTRACTOR shall correct any violations of safety laws, standards, orders, rules, or regulations. Upon the issuance of a citation or notice of violation by the Division of Occupational Safety and Health, such violation shall be corrected immediately by the CONTRACTOR at CONTRACTOR's expense.

(c) In an emergency affecting safety of person or of work or of adjoining property, CONTRACTOR, without special instruction or authorization from ARCHITECT or DISTRICT, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury; and CONTRACTOR shall so act if so authorized or instructed by Architect or DISTRICT. Any compensation claimed by CONTRACTOR on account of emergency work shall be determined by written agreement with the DISTRICT.

(d) CONTRACTOR shall take adequate precautions to protect existing roads, sidewalks, curbs, pavements, utilities, adjoining property and structures (including, without limitation, protection from settlement or loss of lateral support), and to avoid damage thereto, and repair any damage thereto caused by construction operations.

(e) CONTRACTOR shall (unless waived by the DISTRICT in writing):

(1) When performing new construction on existing sites, become informed and take into specific account the maturity of the students on the site; perform work which may interfere with school routine before or after school hours; enclose working area with a substantial barricade; not allow any unauthorized individuals on the site; require all workers on the Project to be conspicuously identified either by a firm logo on their clothing or prominent identification badge and arrange work to cause a minimum amount of inconvenience and danger to students and faculty in their regular school activities.

(2) Provide substantial barricades around any shrubs or trees indicated to be preserved.

(3) Deliver materials to building area over route designated by ARCHITECT.

(4) When directed by DISTRICT, take preventive measures to eliminate objectionable dust.

(5) Enforce all instructions of DISTRICT and ARCHITECT regarding signs, advertising, fires, and smoking and require that all workers comply with all regulations while on construction site.

(6) Take care to prevent disturbing or covering any survey markers, monuments, or other devices marking property boundaries or corners. If such markers are disturbed by accident, they shall be replaced by an approved civil engineer at no cost to the DISTRICT.

ARTICLE 54. NON-DISCRIMINATION

In the performance of the terms of this Agreement, CONTRACTOR agrees that it will not engage in nor permit such subcontractor as it may employ to engage in unlawful discrimination in employment of persons because of the race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, age or sex of such persons.

ARTICLE 55. SCHEDULE OF VALUES AND PERIODICAL ESTIMATES

(a) CONTRACTOR shall furnish on form(s) approved by DISTRICT:

(1) Within ten (10) calendar days of award of contract a detailed schedule of values giving complete breakdown of contract price for each component of the Project or site which shall include all subcontractor/supplier agreements showing dollar amounts of these agreements to justify the schedule of values; and

(2) A periodical itemized estimate of work done for purpose of making partial payments thereon. Change order work shall be clearly identified on a separate schedule of values.

(3) Within ten (10) calendar days of request of DISTRICT, a schedule of estimated monthly payments which shall be due CONTRACTOR under the Agreement.

(b) Values employed in making up any of these schedules are subject to the ARCHITECT's written approval and will be used only for determining basis of partial payments and will not be considered as fixing a basis for additions to or deductions from contract price.

ARTICLE 56. CONTRACTOR CLAIMS

If the CONTRACTOR shall claim compensation for any damage sustained by reason of the acts of the DISTRICT or its agents, CONTRACTOR shall, within five (5) calendar days after sustaining of such damage, make to the ARCHITECT a written statement of the damage sustained. On or before the 15th day of the month succeeding that in which such damage shall have been sustained the CONTRACTOR shall file with the DISTRICT an itemized statement of the details and amount of such damage, and unless such statement shall be made as thus required, CONTRACTOR's claims for compensation shall be forfeited and invalidated and it shall not be entitled to consideration for payment on account of any such damage.

ARTICLE 57. DISPUTES - ARCHITECT'S DECISIONS

(a) The ARCHITECT shall, within a reasonable time, make decisions on all matters relating to the CONTRACTOR's execution and progress of the work. The decisions of the ARCHITECT shall not be binding, but shall be advisory only on the CONTRACTOR for the purpose of CONTRACTOR's obligation to proceed with the work.

(b) Except for tort claims, all claims by the CONTRACTOR for a time extension, payment of money or damages arising from work done by, or on behalf of, the CONTRACTOR pursuant to the Agreement and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to, or as to the amount of payment which is disputed by the DISTRICT of Three Hundred Seventy Five Thousand Dollars (\$375,000) or less shall be subject to the settlement procedures set forth in Public Contract Code Section 20104, et seq. which provisions are incorporated herein by reference.

(c) In the event of a dispute between the parties as to performance of the work, the interpretation of this Agreement or payment or nonpayment for work performed or not performed, the parties shall attempt to resolve the dispute. Pending resolution of the dispute, CONTRACTOR agrees to continue the work diligently to completion. If the dispute is not resolved, CONTRACTOR agrees it will neither rescind the Agreement nor stop the progress of the work, but CONTRACTOR's sole remedy shall be to submit such controversy to determination by a court of the State of California, in Orange County, having competent jurisdiction of the dispute, after the Project has been completed, and not before.

ARTICLE 58. PAYMENTS

(a) Unless otherwise specified in writing, each month within thirty (30) days after receipt by the DISTRICT of the monthly progress schedule and an undisputed, properly submitted payment request from CONTRACTOR which has been certified for payment by the Architect, there shall be paid to CONTRACTOR a sum equal to ninety-five percent (95%) of value of work performed and of materials delivered to the jobsite and inspected and approved by the inspector of record and subject to or under the control of the DISTRICT and unused up to the last day of the previous month, less aggregate previous payments. Public Contract Code Section 20104.50 Monthly payments shall be made only on the basis of monthly estimates which shall be prepared by CONTRACTOR on a form approved by DISTRICT and filed before the fifth day of the month during which payment is to be made. Work completed as estimated shall be an estimate only and no inaccuracy or error in said estimate shall operate to release CONTRACTOR or Surety from any damages arising from such work or from enforcing each and every provision of this Agreement, and DISTRICT shall have the right subsequently to correct any error made in any estimate for payment. CONTRACTOR SHALL NOT BE ENTITLED TO HAVE ANY PAYMENT ESTIMATES PROCESSED OR BE ENTITLED TO HAVE ANY PAYMENT FOR WORK PERFORMED SO LONG AS ANY LAWFUL OR PROPER DIRECTION CONCERNING WORK, OR ANY PORTION THEREOF, GIVEN BY THE DISTRICT OR ARCHITECT SHALL REMAIN UNCOMPLIED WITH BY THE CONTRACTOR. CONTRACTOR AGREES TO THE FIVE PERCENT (5%) RETENTION ON ALL PROGRESS PAYMENTS. Public Contract Code Section 9203.

(b) DISTRICT has discretion to require from the CONTRACTOR any of the following information with the application for payment: (i) certified payroll covering the period of the prior application for payment; (ii) unconditional waivers and releases from all subcontractors/suppliers for which payment was requested under the prior application for payment; and/or (iii) receipts or bills of sale for any items. CONTRACTOR agrees that payment may be contingent upon District receiving any one or more of these documents.

(c) Before payment is made hereunder, a certificate in writing shall be obtained from the ARCHITECT stating that the work for which the payment is demanded has been performed in accordance with the terms of the Project Documents and that the amount stated in the certificate is due under the terms of the Project Documents, which certificate shall be attached to and made a part of the claim made and filed with the DISTRICT,

provided that if the ARCHITECT shall, within three (3) days after written demand therefore, fail to deliver such certificate to the DISTRICT, the CONTRACTOR may file its claim with the DISTRICT without said certificate, but together with such claim shall be filed a statement that demand was made for such certificate and that the same was refused. Thereupon, the DISTRICT will either allow said claim as presented or shall, by an order entered on the minutes of said DISTRICT state the reasons for refusing to allow said claim. It is understood, moreover, that the certificate of the ARCHITECT shall not be conclusive upon the DISTRICT, but advisory only.

(d) Upon receipt of CONTRACTOR's payment request, DISTRICT shall review the payment request as soon as practicable after receipt for the purpose of determining that the payment request is proper. Any payment request determined not to be proper shall be returned to the CONTRACTOR as soon as practicable but not later than seven (7) days after receipt and shall be accompanied by a document setting forth in writing the reasons(s) why the payment request was not proper. Public Contract Code Section 20104.50

(e) NO PAYMENT BY DISTRICT HEREUNDER SHALL BE INTERPRETED SO AS TO IMPLY THAT DISTRICT HAS INSPECTED, APPROVED, OR ACCEPTED ANY PART OF THE WORK.

(f) Unless otherwise provided, on or before making request for final payment of the undisputed amount due under the Agreement, CONTRACTOR shall submit to DISTRICT, in writing a summary of all claims for compensation under or arising out of this Agreement which were timely filed. The acceptance by CONTRACTOR of the payment of the final amount shall constitute a waiver of all claims against DISTRICT under or arising out of this Agreement, except those previously made, in a timely manner and in writing, and identified by CONTRACTOR as unsettled at the time of CONTRACTOR's final request for payment.

(g) CONTRACTOR shall pay each of its subcontractors from whom retention has been withheld each subcontractor's share of the retention received within seven (7) days from the time that all or any portion of the retention are received by the CONTRACTOR subject to any limitations set forth in Public Contract Code Section 7107(e).

(h) The final payment of the five percent (5%) retention of the value of the work done under this Agreement, if unencumbered, shall be made thirty-five (35) days after recording by the DISTRICT of the Notice of Completion at the County Recorder's Office. APPROVAL OF COMPLETION OF THE PROJECT WILL BE MADE ONLY BY ACTION OF THE GOVERNING BOARD OF DISTRICT. Public Contract Code Section 7107.

ARTICLE 59. CHANGES AND EXTRA WORK

(a) DISTRICT may, as provided by law and without affecting the validity of this Agreement, order changes, modifications, deletions and extra work by issuance of written change orders from time to time during the progress of the Project, contract sum being

adjusted accordingly. All such work shall be executed under conditions of the original Agreement except that any extension of time caused thereby shall be adjusted at time of ordering such change. DISTRICT has discretion to order changes on a "time and material" basis with adjustments to time made after CONTRACTOR has justified through documentation the impact on the critical path of the Project.

(b) Notwithstanding any other provision in the Project Documents, the adjustment in the contract sum, if any, and the adjustment in the contract time, if any, set out in a change order shall constitute the entire compensation and/or adjustment in the contract time due CONTRACTOR arising out of the change in the work covered by the change order unless otherwise provided in the change order. The amount of the compensation due CONTRACTOR shall be calculated pursuant to subparagraph (e) of this Article 59. The entire compensation shall not include any additional charges not set forth in subparagraph (e) and shall not include delay damages (due to processing of a change order, refusal to sign a change order) indirect, consequential, and incidental costs including any project management costs, extended home office and field office overhead, administrative costs and profit other than those amounts authorized under subparagraph (e) of this Article 59.

(c) In giving instructions, ARCHITECT shall have authority to make minor changes in work, not involving change in cost, and not inconsistent with purposes of the Project. The DISTRICT's Assistant Superintendent of Business Services may authorize changes in work involving a change in cost that does not exceed Fifteen Thousand Dollars \$15,000. Otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order from DISTRICT, authorized by action of the governing board, and no claim for addition to contract sum shall be valid unless so ordered.

(d) If the ARCHITECT determines that work required to be done constitutes extra work outside the scope of the Agreement, the ARCHITECT shall send a request for a detailed proposal to the CONTRACTOR. CONTRACTOR will respond with a detailed proposal within five (5) calendar days of receipt of the Request for Proposal which shall include a complete itemized cost breakdown of all labor and materials showing actual quantities, hours, unit prices, and the wage rates required for the change. If the change order involves a change in construction time, a request for the time change shall accompany the change order cost breakdown. All such requests for time shall be specified by CONTRACTOR as either "work days" or "calendar days." Any request for time received with only the designation of "days" shall be considered calendar days. The term "work days" as used in this paragraph shall mean Monday through Friday, excluding Saturdays, Sundays and federal/State of California observed holidays. If the work is to be performed by a subcontractor, CONTRACTOR must include a bid from the subcontractor containing the same detailed information as required for CONTRACTOR. No extensions of time will be granted for change orders that, in the opinion of the ARCHITECT, do not affect the critical path of the Project.

(e) Value of any such extra work, change, or deduction shall be determined at the discretion of DISTRICT in one or more of the following ways:

(1) By mutual written acceptance of a lump sum proposal from CONTRACTOR properly itemized and supported by sufficient substantiating data to permit evaluation by DISTRICT and ARCHITECT.

(2) By unit prices contained in CONTRACTOR's original bid and incorporated in the Project Documents or fixed by subsequent agreement between DISTRICT and CONTRACTOR.

(3) By cost of material and labor and percentage for overhead and profit ("time and material"). If the value is determined by this method the following requirements shall apply:

(A) Daily Reports by Contractor.

(i) General. At the close of each working day, the CONTRACTOR shall submit a daily report to the ARCHITECT and the Inspector, on forms approved by the DISTRICT, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, and for other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the ARCHITECT and the CONTRACTOR. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by Subcontractors or others shall be submitted through the CONTRACTOR.

(ii) Labor. The report shall show names of workers, classifications, and hours worked and hourly rate. Project Superintendent expenses are not allowed.

(iii) Materials. The report shall describe and list quantities of materials used and unit cost.

(iv) Equipment. The report shall show type of equipment, size, identification number, and hours of operation, including loading and transportation, if applicable, and hourly/daily cost.

(v) Other Services and Expenditures. Other services and expenditures shall be described in such detail as the DISTRICT may require.

(B) Basis for Establishing Costs

(i) Labor. The costs of labor will be the actual cost for wages prevailing locally for each craft classification or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs

resulting from federal, state or local laws, as well as assessments or benefits required by lawful collective bargaining agreements. The use of labor classification which would increase the extra work cost will not be permitted unless the CONTRACTOR establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.

(ii) Materials. The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the work site in the quantities involved, plus sales tax, freight and delivery. The DISTRICT reserves the right to approve materials and sources of supply, or to supply materials to the CONTRACTOR if necessary for the progress of the work. No markup shall be applied to any material provided by the DISTRICT.

(iii) Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of \$100 or less or where an invoice is not provided.

Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental source, or distributors, at the time the work is performed. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Necessary loading and transportation costs for equipment used on the extra work shall be included. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the DISTRICT than holding it at the work site, it shall be returned, unless the CONTRACTOR elects to keep it at the work site at no expense to the DISTRICT.

All equipment shall be acceptable to the ARCHITECT, in good working condition, and suitable for the purpose for which it is to be used. Manufacturer's ratings and manufacturer's approved modifications shall be used to classify equipment and it shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

(iv) Other Items. The DISTRICT may authorize other items which may be required on the extra work. Such items include labor, services, material and equipment which are different in their nature from those required by the work and which are of a type not ordinarily available from the CONTRACTOR or any of the subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.

(v) Invoices. Vendors' invoices for material, equipment rental, and other expenditures, shall be submitted with the request for payment. If the request for payment is not substantiated by invoices or other documentation, the DISTRICT may establish the cost of the item involved at the lowest price which was current at the time of the report.

(C) The following form shall be used as applicable by the DISTRICT and CONTRACTOR to communicate proposed additions and deductions to the Agreement.

	<u>EXTRA</u>	<u>CREDIT</u>
i. Material/Equipment (attach itemized quantity and unit cost plus sales tax)	_____	_____
ii. Labor (attach itemized hours and rates)	_____	_____
iii. Subtotal	_____	_____
iv. If subcontractor performed work, add Subcontractor's overhead and profit to portions performed by it, not to exceed 15% of Item iii. above	_____	_____
v. Subtotal	_____	_____
vi. General Contractor's Overhead and Profit, not to exceed 15% of Item v if Contractor performed the work. If subcontractor performed the work, not to exceed 5% of Item v. Of portions performed by Contractor and subcontractors, portions performed by Contractor shall not exceed 15% of Item V, and portions performed by Subcontractor shall not exceed 5% of Item v.	_____	_____
vii. Subtotal	_____	_____
viii. Bond and Liability Insurance Premium, if in fact additional bonds or insurance were actually purchased, not to exceed 1% of		

Item vii. _____

ix. Total _____

(4) IT IS EXPRESSLY UNDERSTOOD THAT THE VALUE OF SUCH EXTRA WORK OR CHANGES, AS DETERMINED BY ANY OF THE AFOREMENTIONED METHODS, EXPRESSLY INCLUDES ANY AND ALL OF CONTRACTOR'S COSTS AND EXPENSES, BOTH DIRECT AND INDIRECT, RESULTING FROM ADDITIONAL TIME REQUIRED ON THE PROJECT, OR RESULTING FROM DELAYS TO THE PROJECT. ANY COSTS OR EXPENSES NOT INCLUDED ARE DEEMED WAIVED. FOR PURPOSES OF DETERMINING THE COST, IF ANY, OF ANY EXTRA WORK, CHANGE, ADDITION OR OMISSION HEREUNDER, ALL TRADE DISCOUNTS, REBATES, REFUNDS, AND ALL RETURNS FROM THE SALE OF SURPLUS MATERIALS AND EQUIPMENT SHALL ACCRUE AND BE CREDITED TO CONTRACTOR, AND CONTRACTOR SHALL ENSURE THAT SUCH DISCOUNTS, REBATES, REFUNDS, AND RETURNS MAY BE SECURED, AND THE AMOUNT THEREOF SHALL BE ALLOWED AS A REDUCTION OF CONTRACTOR'S COST IN DETERMINING THE ACTUAL COST OF CONSTRUCTION FOR PURPOSES OF ANY EXTRA WORK, CHANGE, ADDITION OR OMISSIONS IN THE WORK AS PROVIDED HEREIN.

(f) If the CONTRACTOR should claim that any instruction, request, drawing, specification, action, condition, omission, default, or other situation obligates the DISTRICT to pay additional compensation to CONTRACTOR or to grant an extension of time, or constitutes a waiver of any provision in the Agreement, CONTRACTOR shall notify the DISTRICT, in writing, of such claim within five (5) calendar days from the date CONTRACTOR has actual or constructive notice of the factual basis supporting the claim. The notice shall state the factual bases for the claim and cite in detail the Project Documents (including plans and specifications) upon which the claim is based. The CONTRACTOR's failure to notify the DISTRICT within such five (5) day period shall be deemed a waiver and relinquishment of such a claim. If such notice be given within the specified time, the procedure for its consideration shall be as stated above in these General Conditions.

(g) “PROHIBITED USAGE OF CONTRACTOR QUALIFYING LANGUAGE STAMPS ON DISTRICT DRAWINGS OR CONTRACT FORMS.” Contractor shall not countersign or endorse any form, drawing, change order, contract or other documents with any conditions not mutually agreed to in advance by the DISTRICT and the CONTRACTOR. Endorsement of a contract, change order, specification, drawing or form with the following: “This change order is being executed without waiver of the right to seek additional compensation for such services,” shall be of no legal force or effect.

ARTICLE 60. COMPLETION

(a) The DISTRICT shall accept completion of the Project and have the Notice of Completion recorded within ten (10) days of acceptance of completion of the Project when the entire work including punch list items shall have been completed to the satisfaction of the DISTRICT. Civil Code Section 3093. The work may only be accepted as complete by action of the DISTRICT's Governing Board.

(b) However, the DISTRICT, at its sole option, may accept completion of the Project and have the Notice of Completion recorded when the entire work including individual portions of the work shall have been completed to the satisfaction of the DISTRICT, except for minor corrective items, as distinguished from incomplete items.

(c) A final walk through of the Project to determine completion and to record the Notice of Completion shall occur only upon a valid claim by CONTRACTOR that the Project is complete except for minor corrective items. Any erroneous claims of completion by CONTRACTOR resulting in a premature walk through shall be at CONTRACTOR's sole cost and expense and DISTRICT shall make adjustments to the contract price by reducing the amount thereof to pay for any costs incurred by the DISTRICT due to the erroneous claims by the CONTRACTOR that the Project is complete. Minor corrective items shall be identified in the final walk through of the Project.

(d) If the CONTRACTOR fails to complete the minor corrective items prior to the expiration of the thirty-five (35) day period immediately following recording of the Notice of Completion, the DISTRICT shall withhold from the final payment an amount equal to one hundred fifty percent (150%), as determined by the DISTRICT, of the amount of each item until such time as the item is completed. Public Contract Code Section 7107. At the end of such 35-day period, if there are items remaining to be corrected, the DISTRICT may elect to proceed as provided in Article 61(b) entitled "Adjustments to Contract Price."

ARTICLE 61. ADJUSTMENTS TO CONTRACT PRICE

(a) If CONTRACTOR defaults or neglects to carry out the work in accordance with the Project Documents or fails to perform any provision thereof, DISTRICT may, after ten (10) days written notice to the CONTRACTOR and without prejudice to any other remedy it may have, make good such deficiencies.

(b) The DISTRICT shall adjust the total contract price by reducing the amount thereof by the cost of making good such deficiencies. If DISTRICT deems it inexpedient to correct work not done in accordance with the Project Documents, an equitable reduction in the contract price shall be made therefore.

ARTICLE 62. CORRECTION OF WORK

(a) CONTRACTOR shall promptly remove all work identified by DISTRICT as failing to conform to the Project Documents, whether incorporated or not.

CONTRACTOR shall promptly replace and re-execute its own work to comply with Project Documents without additional expense to DISTRICT and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

(b) If CONTRACTOR does not remove such work within a reasonable time, fixed by written notice, DISTRICT may remove it and may store the material at CONTRACTOR's expense. If CONTRACTOR does not pay expenses of such removal within ten (10) days' time thereafter, DISTRICT may, upon ten (10) days written notice, sell such materials at auction or at private sale and shall account for net proceeds thereof, after deducting all costs and expenses that should have been borne by CONTRACTOR.

ARTICLE 63. EXTENSION OF TIME - LIQUIDATED DAMAGES

(a) The CONTRACTOR and DISTRICT hereby agree that the exact amount of damages for failure to complete the work within the time specified is extremely difficult or impossible to determine. CONTRACTOR shall be assessed liquidated damages for each and every day the work required under the Project Documents remains unfinished past the time for completion, as set forth in the Agreement, and any extensions of time granted by the DISTRICT to the CONTRACTOR under the terms of the Project Documents. The CONTRACTOR will pay to the DISTRICT or DISTRICT may retain from amounts otherwise payable to the CONTRACTOR, said amount for each day after failure to meet the requirements of the contract completion as scheduled in the Agreement. Government Code Section 53069.85 for purposes of this article, the work shall be considered "complete" in accordance with the provisions of Article 60, "COMPLETION", except that the work may be considered complete without formal acceptance by the DISTRICT Governing Board so long as the Governing Board, at its next regularly scheduled meeting, accepts the work.

(b) CONTRACTOR shall not be charged for liquidated damages, as set forth above, because of any delays in completion of work which are not the fault or negligence of CONTRACTOR, including but not restricted to acts of God. CONTRACTOR shall within ten (10) days of beginning of any such delay, notify DISTRICT in writing of causes of delay. CONTRACTOR shall provide documentation and justification to substantiate the delay and its relation to the Project's critical path. DISTRICT shall ascertain the facts and extent of delay and grant extension of time for completing work when, in its judgment, the findings of fact justify such an extension. The DISTRICT's finding of fact thereon shall be final and conclusive on the parties hereto. Extension of time shall apply only to that portion of work affected by the delay, and shall not apply to other portions of work not so affected.

ARTICLE 64. PAYMENTS WITHHELD

(a) In addition to amount which DISTRICT may retain under Article entitled "COMPLETION" and Article entitled "PAYMENTS," DISTRICT may withhold a

sufficient amount or amounts of any payment or payments otherwise due to CONTRACTOR, as in its judgment may be necessary to cover:

- (1) Payments which may be past due and payable for just claims against CONTRACTOR or any subcontractors, or against and about the performance of work on the Project, including, without limitation, payments made pursuant to the Article entitled "PAYMENTS BY CONTRACTOR."
- (2) The cost of defective work which CONTRACTOR has not remedied.
- (3) Liquidated damages assessed against CONTRACTOR.
- (4) Penalties for violation of labor laws.
- (5) The cost of materials ordered by the DISTRICT pursuant to Article 33 entitled "MATERIALS AND WORK."
- (6) The cost of completion of this Agreement if there exists a reasonable doubt that this Agreement can be completed for the balance then unpaid to CONTRACTOR.
- (7) Damage to DISTRICT, another contractor, or subcontractor.
- (8) Site clean-up as provided in Article 44 entitled "CLEANING UP."
- (9) Payments to indemnify, defend, or hold harmless the DISTRICT.
- (10) Any payments due to the District including but not limited to payments for failed tests, utilities or imperfections.
- (11) Extra services for ARCHITECT.
- (12) Extra services for the INSPECTOR including but not limited to reinspection required due to CONTRACTOR's failed tests or installation of unapproved or defective materials and CONTRACTOR's requests for inspection and CONTRACTOR's failure to attend the inspection.
- (13) Failure of CONTRACTOR to submit on a timely basis, proper and sufficient documentation required by the Project Documents, including without limitation, monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed change orders and verified reports.
- (14) Any other obligation(s) of the DISTRICT which the DISTRICT is authorized and/or compelled by law to perform.

(b) If the above grounds are in the opinion of the DISTRICT removed by or at the expense of CONTRACTOR, payment shall be made for amounts withheld because of them.

(c) DISTRICT may apply such withheld amount or amounts to payment of such claims or obligations at its discretion. In so doing, DISTRICT shall make such payments on behalf of CONTRACTOR. If any payment is so made by DISTRICT, then such amount shall be considered as a payment made under contract by DISTRICT to CONTRACTOR and DISTRICT shall not be liable to CONTRACTOR for such payments made in good faith. Such payments may be made without prior judicial determination of claim or obligations. DISTRICT will render CONTRACTOR an accounting of such funds disbursed on behalf of CONTRACTOR.

(d) As an alternative to payment of such claims or obligations, DISTRICT, in its sole discretion, may reduce the total contract price as provided in Article 61 entitled "ADJUSTMENTS TO CONTRACT PRICE."

ARTICLE 65. TAXES

(a) CONTRACTOR will pay all applicable federal, state and local taxes on all materials, labor, or services furnished by it, and all taxes arising out of its operations under the Project Documents.

(b) If under federal excise tax law any transaction hereunder constitutes a sale on which a federal excise tax is imposed and the sale is exempt from such excise tax because it is a sale to a state or local government for its exclusive use, the DISTRICT, upon request, will execute documents necessary to show (1) that the DISTRICT is a political subdivision of the State for the purposes of such exemption and (2) that the sale is for the exclusive use of the DISTRICT. No excise tax for such materials shall be included in any bid price.

ARTICLE 66. NO ASSIGNMENT

The CONTRACTOR shall not assign, transfer, convey, sublet or otherwise dispose of this Agreement or of its rights, title or interest in or to the same or any part thereof. If the CONTRACTOR shall assign, transfer, convey, sublet or otherwise dispose of the Agreement or its right, title or interest therein, or any part thereof, such attempted or purported assignment, transfer, conveyance, sublease or other disposition shall be null, void and of no legal effect whatsoever; and the Agreement may, at the option of the DISTRICT, be terminated, revoked and annulled, and the DISTRICT shall thereupon be relieved and discharged from any and all liability and obligations growing out of the same to the CONTRACTOR, and to its purported assignee or transferee.

ARTICLE 67. NOTICE

Any notice from one party to the other or otherwise under the Agreement shall be in writing and shall be dated and signed by party giving such notice or by a duly authorized

representative of such party. Any such notice shall not be effective for any purpose whatsoever unless served in one of the following manners:

- (1) If notice is given to DISTRICT, by personal delivery thereof to DISTRICT, or by depositing same in United States mail, enclosed in a sealed envelope addressed to DISTRICT, and sent by registered or certified mail with postage prepaid;
- (2) If notice is given to CONTRACTOR, by personal delivery thereof to said CONTRACTOR, or to CONTRACTOR's superintendent at site of Project, or by depositing same in United States mail, enclosed in a sealed envelope addressed to said CONTRACTOR at its regular place of business or at such address as may have been established for the conduct of work under this Agreement, and sent by registered or certified mail with postage prepaid;
- (3) If notice is given to surety or other persons, by personal delivery to such surety or other person, or by depositing same in United States mail, enclosed in a sealed envelope, addressed to such surety or person at the address of such surety or person last communicated by surety or other person to party giving notice, and sent by registered or certified mail with postage prepaid.

ARTICLE 68. NO WAIVER

The failure of the DISTRICT in any one or more instances to insist upon strict performance of any of the terms of this Agreement or to exercise any option herein conferred shall not be construed as a waiver or relinquishment to any extent of the right to assert or rely upon any such terms or option on any future occasion.

ARTICLE 69. NON-UTILIZATION OF ASBESTOS MATERIAL

- (a) The CONTRACTOR will be required to execute and submit the Certificate Regarding Non-Asbestos Containing Materials.
- (b) Should asbestos containing materials be installed by the CONTRACTOR in violation of this certification, or if removal of asbestos containing materials is part of the Project, decontaminations and removals will meet the following criteria:
 - (1) Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency (EPA).
 - (2) The asbestos removal contractor shall be an EPA accredited contractor qualified in the removal of asbestos and shall be chosen and approved by the asbestos consultant who shall have sole discretion and final determination in this matter.

(3) The asbestos consultant shall be chosen and approved by the DISTRICT who shall have sole discretion and final determination in this matter.

(4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

(c) Cost of all asbestos removal, including, but not necessarily limited to the cost of the asbestos removal contractor, the cost of the asbestos consultant, analytical and laboratory fees, time delays and additional costs as may be incurred by the DISTRICT shall be borne entirely by the CONTRACTOR.

(d) Hold Harmless: Interface of work for the Project with work containing asbestos shall be executed by the CONTRACTOR at his/her risk and at his/her discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of the Agreement, the CONTRACTOR acknowledges the above and agrees to hold harmless the DISTRICT, its Governing Board, employees, agents, and ARCHITECT and assigns for all asbestos liability which may be associated with this work. The CONTRACTOR further agrees to instruct his/her employees with respect to the above mentioned standards, hazards, risks and liabilities.

ARTICLE 70. LEAD

Pursuant to the Lead-Safe Schools Protection Act (Education Code Sections 32240, et seq.) and other applicable law, the CONTRACTOR shall not use lead-based paint, lead plumbing and solders, or other potential sources of lead contamination in the construction of any new school facility or the modernization or renovation of any existing school facility.

ARTICLE 71. CRIMINAL RECORDS CHECK

Education Code Section 45125.1 provides that if the employees of any entity that has a contract with a school district may have any contact with pupils, those employees shall submit or have submitted their fingerprints in a manner authorized by the Department of Justice together with a fee determined by the Department of Justice to be sufficient to reimburse the Department for its costs incurred in processing the application. The CONTRACTOR shall not permit an employee to come in contact with DISTRICT pupils until the Department of Justice has ascertained that the employee has not been convicted of a violent or serious felony. The CONTRACTOR shall certify in writing to the Governing Board of the DISTRICT that none of its employees who may come in contact with pupils have been convicted of a violent or serious felony. Criminal Records Check Certification by CONTRACTOR is included in the Project Documents.

ARTICLE 72. DISABLED VETERAN BUSINESS ENTERPRISES

Each bidder must meet goals and requirements relating to three percent (3%) participation by Disabled Veteran Business Enterprises, established by the DISTRICT and the State Allocation Board (SAB), or make a good faith effort with respect thereto, in accordance with the DISTRICT's policies and procedures. CONTRACTOR may obtain information from the Office of Small Business Certification and Resources (OSBCR) at <http://www.dgs.ca.gov/osbcr> or (916) 323-5478. The CONTRACTOR shall be required to submit to the DISTRICT the DVBE Certification which is included in the Project Documents. Prior to, and as a condition precedent for final payment on the Project, the CONTRACTOR shall provide appropriate documentation to the DISTRICT so that the DISTRICT can assess its success at meeting the DVBE participation goal.

ARTICLE 73. TOBACCO FREE POLICY

CONTRACTOR has been advised and is aware that DISTRICT has adopted a Board Policy which prohibits the use of tobacco products, including smokeless tobacco, anywhere on DISTRICT property. CONTRACTOR shall be responsible for the enforcement of DISTRICT's tobacco-free policy among all CONTRACTOR's employees and subcontractors while on DISTRICT property. CONTRACTOR understands and agrees that should any employee or subcontractor of CONTRACTOR violate the DISTRICT's Board Policy after having already been warned once for violating DISTRICT's tobacco-free policy, CONTRACTOR shall remove the individual for the duration of the Project. CONTRACTOR shall not be entitled to any additional compensation and/or time in completing the Project for such removal.

ARTICLE 74. GOVERNING LAW

The laws of the State of California shall govern the Project and the Agreement.