

## ARTICLE 6

### QUALITY CONTROL

#### 6.1. Conduct of Work:

Construction equipment required for prosecution of the Work, including labor and safety devices, required for installation, operation and maintenance of such equipment shall be provided by Contractor at Contractor's sole expense. Contractor shall obtain necessary measurements for the Work and shall check dimensions, levels, existing construction and lay out and supervise the construction accordingly. When required by City, measurements, information or other proof, as may be necessary, on or of the Work shall be furnished accurately and fully by Contractor without cost to City.

6.1.1. Where more than one trade has performed Work on a particular portion of the Work, there shall be no marring or damaging of any such Work. Should improper Work of any trade be covered by another trade and such improper Work results in damage or defect, the whole Work affected shall be repaired to the satisfaction of City by Contractor, without additional cost to City.

#### 6.2. Materials, Articles and Equipment:

Materials, articles and equipment shall be furnished in sufficient quantities and at such times as to ensure uninterrupted progress of the Work. They shall be so stored and protected as to ensure preservation of their quality, appearance, and suitability for the Work. When stored they shall be so located as to facilitate prompt inspection, and so as to avoid interference with Work of other contractors. Contractor's responsibility with regard to the foregoing matters shall be continuous during any Work stoppage or suspension and under such circumstances unusual measures may be required to properly store and preserve materials, articles and equipment. In the event of loss or damage to any such property, regardless of ownership, prior to Final Acceptance of the completed Work, Contractor shall be required to repair or replace any such lost or damaged property at no expense to City, irrespective of the cause of the loss or damage.

#### 6.3. Property Rights in Materials:

When furnished in accordance with the Contract Documents, materials, articles or equipment shall become the property of City upon payment therefore. Materials, articles or equipment not needed for completion of the Work shall be removed from the job-site by Contractor at no expense to the City. Materials, articles or equipment stored off-site or stored on non-City property but paid for in excess of 50 percent of their value shall be the property of City. Contractor shall allow City access for inspection of such materials, articles or equipment upon demand.

#### 6.4. Submittals:

Contractor shall submit promptly Shop Drawings, descriptive data and samples as required by the Specifications so as to cause no delay in the Work and to allow for sufficient time for review and approvals. Contractor shall check and coordinate such submittals with the Work before they are submitted to City for review.

**6.5. Substitutions:**

For convenience in designation in the Drawings or in the Specifications, certain materials, articles, or equipment may be designated by brand or trade name or name of manufacturer together with catalog designation or other identifying information. Substitute material, article, or equipment which is of equal quality and of required characteristics for purpose intended may be proposed for use provided Contractor complies with the requirements below.

6.5.1. Contractor shall submit a proposal for substitution in writing within time limit designated in the Contract Documents or if not designated, then within a period which will cause no delay in the Work.

6.5.2. No such proposal will be considered unless accompanied by complete information, and descriptive data, including cost of operation, cost of maintenance, and physical requirements necessary to determine equality of offered materials, articles, or equipment. Samples shall be provided when requested by City. When specifically requested by City, Contractor shall submit such Shop Drawings, descriptive data and samples as may be required. The burden of proof as to comparative quality, suitability, or performance of offered proposal shall be upon the Contractor. City will examine, with reasonable promptness, such submittals. City shall be sole judge as to such matters. In the event that City rejects use of such substitution, then one of the particular products designated by brand name shall be furnished. Acceptance of substitution by City shall not relieve Contractor from responsibility for deviations from Contract Drawings and Specifications, or from responsibility for errors in submittals. Failure by Contractor to identify in the letter of transmittal material deviations from Drawings and Specifications shall void the submittal and any action taken thereon by City.

6.5.3. If mechanical, electrical, structural or other changes are required for proper installation and fit of substitute materials, articles or equipment or because of deviations from Contract Drawings and Specifications, such changes shall not be made without consent of City and shall be made by Contractor without additional cost to City. Contractor shall pay for costs of design, drafting, architectural or engineering services and building alterations of the construction required to accommodate any Contractor substitution or construction error to maintain the original function and design.

**6.6. Samples and Tests:**

City shall cause to be performed at its expense, tests of materials, articles, equipment or other Work specified by the Contract Documents, except as otherwise specifically provided. The City reserves the right at its own expense to order tests of any part of the Work in addition to those specified. If, as the result of such tests the Work is found unacceptable, it will be rejected and cost of that test and any additional test required by the City shall then be at Contractor's expense. Unless otherwise directed, samples for testing will be taken from materials, articles or equipment delivered or from Work performed, and tests will be under the observation of and at such places as may be convenient to the City. Materials, articles and equipment requiring tests shall be delivered in sufficient time before intended use to allow for testing, and none may be used before receipt of written approval by City. Any samples delivered to City or to the premises for examination, including testing, shall be disposed of by Contractor at its own expense within ten

(10) calendar days after Contractor acquires knowledge that such examination is concluded, unless otherwise directed by City. Approved samples shall be maintained by Contractor in the same condition as when approved until notified by the City that samples may be disposed of. Disposal and maintenance of samples shall be by Contractor at no cost to City. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the City.

**6.7. Correction or Removal of Defective Work:**

Contractor shall correct immediately any unsatisfactory or defective Work which may be discovered. Unsatisfactory materials will be rejected, notwithstanding that they may have been overlooked by the proper inspector. If any portion of the Work is covering defective or unsatisfactory Work, the cost of exposing and recovering after correction shall be borne by the Contractor. The inspection of the Work, or any part thereof, shall not relieve Contractor of the obligation to perform satisfactory Work as prescribed by the Contract Documents.

6.7.1. Failure or neglect on the part of City or any of its authorized agents to reject unsatisfactory or defective Work or materials will not be construed to imply an acceptance of such Work or materials if such becomes evident at any time. Such failure shall not be construed as barring City from recovering damages or such a sum of money as may be required to replace or repair the affected portions of the Work whenever City may discover the same.

**6.8. Retention of Defective Work:**

If, instead of requiring correction or removal and replacement of defective Work, City prefers to accept it, City may do so. In such case an appropriate amount, in City's sole judgment, shall be deducted from the Contract Price.

**6.9. Preservation and Cleaning:**

Contractor shall clean up the Work as necessary and at other times when directed by the City. While finish Work is being accomplished, floors shall be kept clean, free of dust, construction debris and trash. Directly upon completion of the Work, Contractor shall remove from the premises construction equipment and any waste materials not previously disposed of, leaving the premises thoroughly clean and ready for City's final inspection.

**6.10. Guarantee:**

Except as otherwise expressly provided in the Specifications and excepting only items of routine maintenance, ordinary wear and tear and unusual abuse or neglect, Contractor shall guarantee all Work performed hereunder, together with all supplies, materials and devices of whatsoever nature incorporated in, or attached to the Work or otherwise delivered to City as a part of the Work pursuant to the Contract Documents, to be free of defects of fabrication, installation and materials for a period of one year after the issuance of the Certificate of Substantial Completion by the City. Contractor shall repair or replace such Work or material, together with other Work or material which may be displaced or damaged in so doing, without expense or charge of any nature whatsoever to City.

6.10.1. In the event that Contractor shall fail to comply with the conditions of the foregoing guarantee within five (5) calendar days time, after being notified of the defect in writing, City will have the right, but shall not be obligated to repair, or obtain the repair of, the defect and Contractor shall pay to City on demand all costs and expense of such repair including all staff and administrative (including legal) expenses required to enforce the guarantee. Notwithstanding anything herein to the contrary, in the event that any defect in fabrication, installation or material covered by the foregoing guarantee results in a condition which constitutes an immediate hazard to the health or safety of any person, or any property interest, City will have the right to immediately repair, or cause to be repaired, such defect, and Contractor shall pay to City on demand costs and expense of such repair including all staff and administrative (including legal) expenses required to enforce the guarantee. The foregoing statement relating to hazards to health, safety or property shall be deemed to include either temporary or permanent repairs which may be required as determined in the sole discretion and judgment of City.

## **ARTICLE 7**

### **PAYMENTS AND CHANGES IN THE WORK**

#### **7.1. Payments:**

Contractor shall furnish a complete breakdown of the Contract Price on the Schedule of Values form contained in the Contract Documents. No payment will be made by City to Contractor until Contractor's Schedule of Values has been submitted and approved.

7.1.1. If requested by City, Contractor shall furnish full copies of subcontracts showing actual costs.

7.1.2. On the first business day of each month, Contractor shall present to the Project Manager an application showing the amount of labor and materials incorporated in the Work during the preceding month. Payment for materials delivered and stored at the job-site will be considered. In no event will payment be made for more than specified in the approved Schedule of Values. All payments will be consistent with the approved Progress Schedule. The Project Manager will inspect the application and, if the Project Manager approves the application, will issue a certificate for ninety percent (90%) of the amount found to be due.

7.1.3. No inadvertency or error in said monthly application will operate to release Contractor's surety from damages arising from such Work or from enforcement of each and every provision of the Contract Documents, and City will have the right subsequently to correct any error made in any payment.

7.1.4. Contractor shall not be paid for any defective or improper Work. City may, at its option, and at any time, retain out of any money due Contractor, sums sufficient to: (1) cover any unpaid claims filed pursuant to Civil Code Sections 3179 et. seq. and (2) may decline to certify payment and may withhold the certificate, in whole or in part, to the extent necessary and reasonable to protect City's interest. If in the opinion of the City, the Contractor is unable to make representations sufficient to the City to certify payment in the amount of the Application, the City will notify the Contractor. If the Contractor and the City cannot agree on a revised amount, the City will promptly issue a Certificate for Payment for the amount the City has approved. The City may also decline to certify payment, or because of subsequently discovered evidence or subsequent observations the City may nullify in whole or any part of any Certificate for Payment previously issued, to such extent as may be necessary in the City's opinion to protect the City from loss due to and/or effecting enforcement of:

1. Defective Work not remedied.
2. Stop Notices filed.
3. Failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment.
4. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract sum.
5. Damage to the City or another Contractor.
6. Reasonable evidence that the Work will not be completed within the Contract Time.

7. Persistent failure to carry out the Work in accordance with the Contract Documents.
8. Prevailing Wage and/or Labor Code violations.

7.1.5. When, under the provisions of the Contract Documents the City charges any sum of money against Contractor, City will deduct and retain the amount of such charge from the amount of subsequent progress payment, or from any other monies due or that may become due Contractor from City. If, on completion or termination of the Contract, sums due Contractor are insufficient to pay City's charges against Contractor, City will have the right to recover the balance from Contractor or Contractor's surety.

7.1.6. The payment of any progress payment or the acceptance thereof by Contractor will not constitute acceptance of the Work or any portion thereof and will in no way reduce the liability of Contractor to replace unsatisfactory Work or material, though the unsatisfactory character of such Work or material may or may not have been apparent or detected at the time such payment was made.

7.1.7. City may unilaterally order minor changes in the Work not involving adjustment in the Contract Price, or extension of the time for performance as specified in the Contract Documents. Such changes shall be effected by written change order and shall be binding on the City and Contractor. Contractor shall carry out such written orders promptly.

#### 7.2. Retention:

City will retain ten percent (10%) of the estimated value of Work done and a like percentage within limits established by law of the value of materials estimated to have been furnished and delivered unused and stored, as partial security for fulfillment of the Contract by Contractor. At any time after ninety-five percent (95%) of the Work has been completed and City determines that satisfactory progress is being made to complete the balance of the Work, City may, in its sole and exclusive discretion, reduce funds withheld, provided that such reduction has been approved in writing by the surety on the Performance Bond and by the surety on the Payment Bond.

7.2.1. Payment of the final amount due under the Contract Documents, and the adjustment and payment for any Work done in accordance with any alteration of the same, shall release City, its officers and agents from any and all claims or liability on account of Work performed under the Contract Documents. The final amount withheld and retained by City shall not be due and payable until the expiration of thirty-five (35) calendar days from the date of Final Acceptance of the Work by City.

#### 7.3. Substitution of Securities:

Upon Contractor's request, City will make payment of funds withheld from progress payments pursuant to the requirements of Sacramento City Code 3.60.250 if Contractor deposits in escrow with the City Treasurer, or a State or Federal chartered bank as escrow agent, securities eligible for investment of City funds upon the following conditions:

7.3.1. Contractor shall bear expenses of City and Escrow Agent (either the City Treasurer or the bank) in connection with the substitution of securities.

7.3.2. Securities or certificates of deposit to be placed in escrow shall be subject to approval of City and unless otherwise permitted by escrow contract, shall be of a value at least equivalent to the amount of retention to be paid to Contractor pursuant to this Section.

7.3.3. Contractor shall enter into an escrow contract satisfactory to City, which contract shall include provisions covering, without limitation, the amount of securities to be deposited, and termination of escrow upon completion of the Contract, and provide powers of attorney or other documents necessary for transfer of securities to be deposited, conversion to cash to provide funds to meet defaults by Contractor including, but not limited to, termination of Contractor's control over the Work, stop notices filed pursuant to law, assessment of liquidated damages or other amounts to be kept or retained under provisions of the Contract, and decrease in value of securities on deposit.

7.3.4. Contractor shall obtain advance written consent of each surety to such escrow agreements. City will not approve deposit of any security or certificates of deposit or other instruments unless written proof of surety consent is furnished.

7.3.5. Subject to City's rights under the Contract Documents and the escrow contract, Contractor shall be beneficial owner of any securities substituted for money withheld and shall receive any interest thereon.

#### 7.4. Changes:

City reserves the right to order in writing changes in the Drawings and Specifications, at any time prior to the acceptance of the Work without voiding the Contract and Contractor shall comply with such orders. Changes, extra Work or deviations from the Drawings and Specifications shall not be made without authority in writing from City. On the basis set forth herein, the Contract Price will be adjusted for any change order requiring labor, materials, equipment or quality of materials or equipment over and above that originally required in the Contract Documents or resulting in lesser quantity or quality thereof. Whenever it appears to Contractor that a change is necessary, or when so ordered by City, or upon receipt by Contractor of a proposed change order (PCO), Contractor shall, if necessary, halt Work in the area that may be affected. Changed Work shall be performed in accordance with original requirements of the Contract subject to the terms of the change and any previously executed change orders.

7.4.1. The only costs which will be allowed because of changed Work, and the manner in which such costs shall be computed, are set forth in Sections 7.5. through 7.13. inclusive. Where the term "actual cost" is used in this subparagraph, it shall be read to mean "estimated cost" where adjustment in Contract Price is in fact to be based upon estimated costs.

#### 7.5. Change Order Procedures:

Changes in the Contract requirements and Contract Price will be effected as set forth herein. Contractor will be issued a Proposed Change Order (PCO) describing the intended change. Within ten (10) calendar days of receipt of the order, Contractor shall indicate in writing the proposed price to be added or deducted from the Contract Price due to the change, supported by

full and completely detailed estimates of all costs by Contractor, Subcontractor, vendor or supplier and any adjustment in time of final completion of the entire Work which is directly attributable to changed Work. Contractor shall upon request by City permit inspection of Contractor's original estimates, subcontract agreements or purchase orders relating to the change. If contract is reached as to the adjustment in compensation for performance of changed Work, but contract is not reached as to the time adjustment for such Work, then Contractor shall proceed with the Work at the agreed price and time as estimated by the City.

7.5.1. If Contractor fails to submit the cost and time estimate within the ten (10) calendar day period or if City and Contractor fail to agree as to the cost of PCO, Contractor shall, upon written order from City, proceed immediately with the changed Work. Contractor shall maintain a daily record with detailed summary of all labor, materials and equipment required for the changed Work which shall be submitted to the City daily. Upon being jointly approved by City and Contractor at the end of each day's performance, the daily record will become the basis for subsequent payment for the changed Work, but such contract shall not preclude subsequent adjustment based upon later audit by City. Upon completion of Work under the change order and upon approval of such Work by City, Contractor shall submit an invoice containing only mutually agreed upon items of labor, materials, equipment and subcontracts which are directly attributable to the change together with mark-ups in accordance with 7.10.

7.5.2. When a PCO contains deletion of any Work or a credit to City and City and Contractor are unable to agree upon the cost thereof, the City's estimate shall be deducted from the Contract Price unless the Contractor presents proof that City's estimate is in error prior to the final payment.

7.6. Change Orders - Labor:

Charges for labor shall be the Contractor's actual payroll costs for labor of any class including: specific field supervision and engineering services directly and solely engaged in the performance of changed Work, including payments or assessment of benefits required by collective bargaining agreements; compensation insurance payments; contributions made to the State of California pursuant to Unemployment Insurance Code and taxes paid to the United States Government pursuant to the Social Security Act of August 14, 1935, as amended. Notwithstanding the foregoing, no labor cost will be allowable at rates in excess of the prevailing wage rates required under Article 2 in the locality where the Work is performed. Use of classifications which would increase labor cost will not be permitted unless Contractor establishes to complete satisfaction of City the necessity for the use of the classification. Overtime must be specifically approved by the City in advance.

7.7. Change Orders - Materials:

Charges for materials shall be the actual costs to Contractor for materials directly required for performance of changed Work. Such cost of materials may include costs of procurement, transportation and delivery if necessarily incurred. If a trade discount by actual supplier is available to Contractor, it shall be credited to City. If materials are obtained from a supply or source owned wholly or in part by Contractor, payment therefore shall not exceed current wholesale price for such materials. If, in the opinion of City, the cost of materials is excessive or if

Contractor fails to furnish satisfactory evidence of the cost from actual supplier, then the cost of materials shall be deemed to be lowest current wholesale price at which similar materials are available in the quantities required. City reserves the right to furnish such materials required by the change order as it deems advisable and Contractor shall have no claims for costs or profits on materials furnished by City.

7.8. Change Orders - Equipment Cost:

Charges for equipment shall be the actual cost to Contractor for use of equipment directly and solely required in performance of the changed Work. No payment will be made for time while equipment is inoperative due to breakdowns or for time in which no Work was performed. Rental time shall include time required to move equipment to the Work from nearest available source for rental of such equipment, and to return it to the source. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the project for any portion of the Work other than upon the changed Work. Individual pieces of equipment having replacement value of \$100 or less shall be considered to be tools or small equipment and no payment therefore will be made. For equipment owned, furnished or rented by Contractor, no cost therefore shall be recognized in excess of rental rates established by distributors or equipment rental agencies in the locality where the Work is performed. The rate to be paid to Contractor for use of equipment shall constitute full compensation to Contractor for all costs of fuel, power, oil, lubrication, supplies, small tools, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators) and any and all costs to Contractor incidental to use of such equipment.

7.9. Change Orders - Subcontracts:

Subcontract costs shall be the actual cost to Contractor for Work performed by Subcontractor. The provisions of Sections 7.5 through 7.8 shall apply to the computation of Subcontract costs. Subcontractor shall compute mark-ups as follows except that the aggregate of the mark-ups made at subcontract tiers shall not exceed twenty-five percent (25%).

7.10. Change Orders - Mark-Ups:

Mark-ups for overhead include, but are not limited to, all overhead, time extensions, indirect costs, office personnel, general superintendency and general expense and shall constitute full compensation for all overhead costs of such Work not included as actual labor, material, equipment and/or Subcontractors.

7.10.1. When Work is added, Contractor or Subcontractor, whomever actually performs the added Work, may add as mark-up to the total of authorized allowable costs an amount not to exceed fifteen percent (15%) for the overhead costs specified in Section 7.10. and an additional ten percent (10%) for profit, for a total not to exceed twenty five percent (25%).

7.10.2. When Work is performed by a Subcontractor, the Contractor may add as mark-up to the total of authorized allowable costs an amount not to exceed five percent (5%). There shall be no mark-ups for intermediate Subcontractors or if the net of all subcontractors is a credit to the City..

7.10.3. When City is entitled to credit for deleted Work, a fifteen percent (15%) credit for deleted overhead of Contractor or Subcontractor, as applicable, shall be added to such credit.

7.10.4. For change orders which involve both added and deleted Work, the Contract Price will be adjusted based on the following computation: Whomever actually performs the Work, authorized allowable costs before mark-ups of added and deleted Work shall each be separately estimated. If the difference between such costs results in an increase to the Contract Price, mark-ups for added Work shall be applied to such difference. If the difference in such costs results in a decrease, then the mark-ups for deleted Work shall be applied to such difference.

7.11. Change Orders - Limitations:

In no event shall actual cost to Contractor for added Work be recognized in excess of market values prevailing at the time of the change, unless Contractor can establish to the complete satisfaction of City that Contractor has investigated all possible means of obtaining such Work at prevailing market values and that the excess cost could not be avoided. City will be sole judge of the necessity for incurring costs in excess of market value and as to whether they are directly required for performance of the changed Work and its decision shall be final.

7.12. Change Orders - Time Extensions:

For changes in the Work, Contractor shall be entitled only to such adjustments in time by which completion of the entire Work is necessarily extended due to performance of the changed Work. Each estimate for change in the Work submitted by Contractor shall state amount of extra time, if any, that Contractor considers should be allowed for making the requested change. Failure to request extra time when submitting such estimate shall constitute a waiver of the right to subsequently claim adjustment in the time for final completion based upon such changed Work.

7.13. Changed Work - Effect on Sureties:

No alterations, extensions of time, extra and additional Work and other changes authorized by these conditions or any part of the Contract shall in any manner affect the obligation of surety under the Contract Documents.

7.14 Claims:

To constitute a proper filing of a claim, Contractor shall set forth in writing and detail, including itemized documentation, the basis for the claim and the amount of money for which demand is made and shall submit same to City within ten (10) calendar days of the event which first gives rise to the claim. No demand by Contractor shall be recognized as a claim by City unless it is so labeled and is filed in accordance with this Section.

7.14.1. The City will examine any claim so filed and, if it finds the claim to be proper, will cause a change order to be issued in the amount found due upon such claim. If the City finds that such claim is without merit, it shall so notify Contractor in writing.

7.15. Claims for Concealed or Unknown Conditions:

Contractor shall promptly, and before such conditions are disturbed, notify City in writing of 1) subsurface or latent physical conditions at the job-site differing materially from those specified or indicated on the Drawings or, 2) unknown physical conditions at the job-site of an unusual nature,

differing materially from those ordinarily encountered. City shall investigate the conditions, and if such conditions are found to materially so differ and cause an increase or decrease in Contractor's cost of, or the time required for, performance of any part of the Work, an equitable adjustment shall be made and the Contract modified by change order accordingly.

7.15.1. No claim of Contractor under this clause shall be allowed unless Contractor has given written notice within five (5) calendar days of discovery of concealed or unknown conditions

7.16. Dispute as to Contract Requirements:

When Contractor and City fail to agree as to whether or not any Work is within the scope of the requirements of the Contract, or fail to agree on other matters, Contractor shall nevertheless immediately perform such Work upon receipt from City of written order to do so. Within ten (10) calendar days after receipt of such order, Contractor may submit written protest to City, specifying in detail in what particulars Contract requirements were exceeded and approximate change in cost resulting there from. At no time shall Contractor stop performance of the Work pending resolution of a dispute unless ordered in writing by the City to do so.

7.16.1 Failure to submit such protest within the period specified shall constitute waiver of any and all right to adjustment in Contract Price or the time for performance of the Work, and Contractor thereafter shall not be entitled to adjustment of the Contract Price or the time for performance of the Work. For any such Work which is found to exceed Contract requirements and as to which of the above requirements have been met, the Contract Price and time for performance of the Work will be adjusted on same basis as for any other change in the Work. Protests and claims which are denied by the City will be so stated in writing by the City. In such event, Contractor shall be entitled to request a hearing before the Contract Officer, or his designated representative. Contractor shall be afforded a reasonable opportunity to present Contractor's position and substantiation of the protest or claim. The hearing shall be conducted in an informal manner, and no record shall be made of the proceedings other than any written materials which may be submitted by the City or Contractor shall be preserved until the Work is finally accepted by the City. As soon as practicable after the hearing, the City shall reduce its final decision in regard to the dispute in writing and forward it to the Contractor. The findings by the City on such claim or protest will be binding and conclusive upon City and Contractor.

7.17. Arbitration:

Any dispute arising under or related to performance of the Contract Documents, after all remedies and provisions of the Contract Documents have been exhausted, may be resolved by arbitration, if both parties agree in writing. The issues which are submitted to arbitration shall be decided by the arbitrator supported by substantial evidence. The decision will be in writing and will contain the basis for the decision, findings of facts and conclusions of law.

7.17.1. All claims which the parties are aware of, or should, with reasonable diligence, be aware of, will be submitted to the arbitrator in the request for arbitration. Those claims not so submitted shall deemed to be withdrawn.

7.17.2. A request for arbitration by Contractor shall be made no later than thirty (30) calendar days after date of service in person or by mail on the Contractor of the final written decision by City on the dispute.

7.17.3. Whether decided by arbitration, by a court of competent jurisdiction or otherwise, attorney's fees and costs will be allowed to the prevailing party.

## ARTICLE 8

### TERMINATION

#### 8.1. Completion Delay:

In addition to any other rights the City may have, if Contractor has not completed the Work on or before the Completion Date as adjusted by change order or any extension of time granted by City, if any, the City may terminate the Contract at any time thereafter. Upon such termination, Contractor shall not be entitled to receive any compensation for services rendered after such termination and Contractor shall be liable to City for liquidated damages for all periods of time beyond such termination date until the Work is completed.

#### 8.2. Abandonment and Unsatisfactory Performance:

If Contractor should abandon the Work, or if the Work or any portion of the Work should be sublet or assigned without the consent of City, or if the Project Manager determines that the conditions of the Contract Documents in respect to the rate of progress of the Work are not being fulfilled or any part thereof is unnecessarily delayed, or if Contractor should willfully violate or breach, or fail to execute in good faith, any of the terms or conditions of the Contract Documents, or if Contractor should refuse or fail to supply sufficient properly skilled labor or materials, or fail to make prompt payment to Subcontractors for material or labor, or disregard laws, ordinances or proper instruction or orders of the Project Manager then, notwithstanding any provision to the contrary herein, City may give the Contractor and Contractor's surety written notification to immediately cure any such breach, or the Contract will be terminated.

#### 8.3. City Completion:

In the event that notice is given under Section 8.2., and in the event the breach is not cured, or satisfactory arrangement for correction is not made within ten (10) calendar days from date of such notice, the Contract shall, upon the expiration of said ten (10) calendar days from the date of mailing of the notice, cease and terminate. In the event of termination, City will immediately serve notice thereof upon the surety and Contractor. The surety shall have the right to take over and perform the Work, provided, however, that if the surety does not commence performance thereof within thirty (30) calendar days from the date of the mailing to such surety of notice of termination, City may take over the Work and prosecute the same to completion for the account and at the expense of Contractor, and Contractor's surety shall be liable to City for any excess cost occasioned by the City.

8.3.1. In the event City completes the Work, or causes the Work to be completed, as aforesaid, no payment of any sum will be made to Contractor until the Work is complete. All costs of completing the Work, including, but not limited to, legal expenses, the costs of City forces, extra costs of administration and management incurred by City, either direct or indirect, shall be deducted from any sum then due, or which becomes due, to Contractor from City. If the cost of completing the Work exceeds sums owing to Contractor under the Contract, Contractor and the surety shall pay City a sum equal to said difference on demand. In the event City completes the Work and there is a sum remaining due to Contractor after City deducts the aforementioned costs

of completing the Work, then City will thereupon pay such sum to Contractor and Contractor's surety.

8.3.2. No act by the City before the Work is finally accepted including, but not limited to, exercise of other rights under the Contract Documents, actions at law or in equity, extensions of time, payments, claims of liquidated damages, occupation or acceptance of any part of the Work, waiver of any prior breach of the Contract Documents, or failure to take action pursuant to this Article upon the happening of any prior default or breach by Contractor will be construed to be a waiver by, or to estop, the City from acting pursuant to this Article upon any subsequent event, occurrence or failure by Contractor to fulfill the terms and conditions of the Contract Documents. The rights of the City pursuant to this Article are cumulative and in addition to all other rights of City pursuant to the Contract Documents, and at law or in equity.

8.4. Suspension by the City for Convenience:

The City may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the City may desire. In accordance with Article 7, a change order may be issued for increases in costs for labor, materials, equipment and subcontractors solely caused by the suspension, delay or interruption. No change order will be issued to the extent that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible or which is denied under another provision of the Contract Documents.

8.5. Termination of Contract for Convenience:

The City may terminate the performance of work under this contract in accordance with this clause in whole, or from time to time in part for any of the following reasons:

1. Issuance of an order of a court or other public authority having jurisdiction.
2. An act of government, such as a declaration of national emergency, causing material to be unavailable.
3. The City shall determine that such termination is in the best interest of the City.

Any such termination shall be effected by delivery to the Contractor of a notice of termination specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective.

8.5.1. Immediately upon receipt of a notice of termination, and except as otherwise directed by the City, the Contractor shall:

1. Stop work under the contract on the date and to the extent specified in the notice of termination.
2. Place no further orders or subcontracts for materials, services, or facilities except as necessary to complete the portion of the work under the contract which is not terminated, if any.
3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination.
4. Assign to the City, in the manner, at the times, and to the extent directed by the City, all of the right, title, and interest of the Contractor under the orders and subcontracts

- so terminated. The City shall have have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.
5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts with the approval or ratification of the City to the extent the City may require. The City's approval or ratification shall be final for all the purposes of this clause.
  6. Transfer title to the City, and deliver in the manner, at the times, and to the extent, if any, directed by the City,(a) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced as a part of, or acquired in connection with the performance of, the work terminated by the notice of termination, and (b) the completed or partially completed plans, drawings, information, and other property which, if the contract had been completed, would have been required to be furnished to the City.
  7. Use contractors efforts to sell, in the manner, at the times, to the extent, and at the price or prices that the City directs or authorizes, any property of the types referred to in section 8.5.1.6 of this clause, but the Contractor(a) shall not be required to extend credit to any purchaser, and (b), may acquire any such property under the conditions prescribed and at a price or prices approved by the City. The proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the City to the Contractor under this contract or shall otherwise be credited to the price or cost of the work covered by this contract or paid in such other manner as the City may direct.
  8. Complete performance of such part of the work as shall not have been terminated by the notice of termination, if any.
  9. Take such action as may be necessary, or as the City may direct, for the protection and preservation of the property related to this contract which the City has or may acquire an interest.

8.5.2. The Contractor shall submit to the City any termination claim, in the form and with the certification the City prescribes. Such claim shall be submitted promptly but in no event later than ninety (90) days from the effective date of termination, unless one or more extensions in writing are granted by the City upon request of the Contractor made in writing within such ninety (90) day period or authorized extension. If the Contractor fails to submit a termination claim within the time allowed, the City may determine, on the basis of information available, the amount, if any, due to the Contractor because of the termination. The City shall then pay to the Contractor the amount so determined.

8.5.3. Subject to the provisions of section 8.5.1. and 8.5.2., the Contractor and the City may agree upon the whole or any part of the amount or amounts to be paid to the Contractor because of the total or partial termination or work under this clause. The amount or amounts may include those items specified in sections 7.6 thru 7.11. However, such agreed amount or amounts, exclusive of settlement costs, shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. The contract shall be amended accordingly, and the Contractor shall be paid the agreed amount. Nothing in section 8.5.4. of this article, prescribing the amount to be paid to the Contractor in the

event of failure of the Contractor and the City to agree upon the whole amount to be paid to the Contractor because of the termination of work under this clause, shall be deemed to limit, restrict, or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the Contractor pursuant to this section 8.5.3.

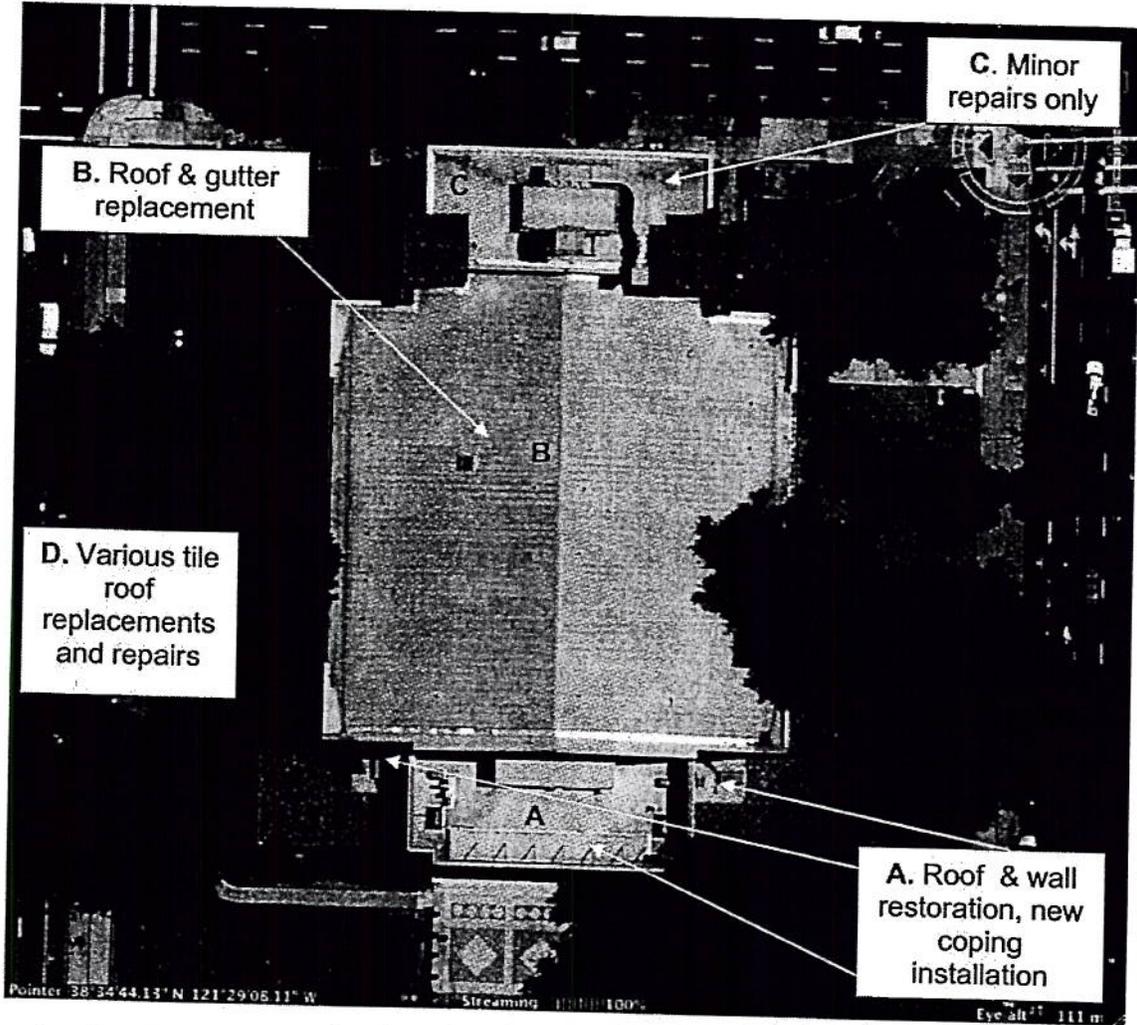
8.5.4. If the Contractor and the City fail to agree, as section 8.5.3. provides, on the whole amount to be paid to the Contractor because of the termination of work under this article, the City shall determine, on the basis of information available, the amount, if any, due to the Contractor by reason of the termination and shall pay to the Contractor for all contract work performed before the effective date of the notice of termination, the total (without duplication of items) of:

1. The cost of such work.
2. The cost of settling and paying claims arising out of the termination of work under subcontracts or orders as section 8.5.1.5. of this article provides. This cost is exclusive of the amounts paid or payable on account of supplies or materials delivered or services furnished by the subcontractor before the effective date of the notice of termination. These amounts shall be included in the cost on account of which payment is made under section 8.5.4.1.
3. A sum as profit that the City determines to be fair and reasonable, but in no event larger than that set forth in section 7.10. If it appears that the Contractor would have sustained a loss on the entire contract had it been completed, no profit shall be included or allowed under this section and an appropriate adjustment shall be made reducing the amount of the settlement to reflect the indicated rate of loss.
4. The reasonable cost of the preservation and protection of property incurred under section 8.5.1.9. of this article. The total sum to be paid to the Contractor under section 8.5.4.1. of this clause shall not exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the contract price of work not terminated. Except for normal spoilage, and except to the extent that the City shall have otherwise expressly assumed the risk of loss, there shall be excluded from the amounts payable to the Contractor under section 8.5.4.1. the fair value, as determined by the City, of property which is destroyed, lost, stolen, or damaged, to the extent that it is undeliverable to the City, or to a buyer under section 8.5.1.7. of this article.

**END OF GENERAL CONDITIONS**

**SPECIAL PROVISIONS**

# Memorial Auditorium Roof Designations



**Memorial Auditorium Roof Repairs  
SECTION A**

**PART I - GENERAL**

**1.01 RELATED DOCUMENTS**

- A. The attached are components of this section:
  - 1. General Conditions.

**1.02 SCOPE OF WORK**

- A. Furnish and install specified coating and related components to restore the existing roof and walls systems on Section A at Memorial Auditorium.
- B. Work includes:
  - 1. Repair of existing flashings.
  - 2. Repair of existing roof system.
  - 3. Installation of the following:
    - a. Application of Energy Star rated high build acrylic polymer coating system.
      - 1) High Build Reflective Coating
    - b. Application of elastomeric wall coating.
      - 1) Wall-Tite Coating
    - c. Installation of new coping system.
- C. It is understood that this Bid Proposal is based upon completion of the Work within a period of sixty (60) calendar days. The Contractor shall coordinate activities with the Convention Center staff prior to start of work. It may be necessary for the Contractor to schedule elements of the work around existing booked events in the Auditorium. A schedule of booked events is located in Section A of the Specifications.

**1.03 QUALITY CONTROL**

- A. Contractor shall:
  - 1. Be experienced in built up and reflective coating installation.
  - 2. Be acceptable by Owner.
  - 3. Be approved in writing by the roofing material manufacturer to install manufacturer's products and systems in accordance with the manufacturer's warranty requirements.
- B. Roofing material manufacturer shall:

1. Be Associate Member in good standing with National Roofing Contractors' Association (NRCA) for at least five (5) years.
2. Be nationally recognized in roofing, waterproofing, and moisture survey industry for at least ten (10) years.
3. Provide a coating that meets or exceeds the California Energy Commission's Title 24 requirements for reflectance and emissivity adopted for 2005. Be approved by Owner.
4. Provide Owner with the names of at least 3 qualified applicators.
5. Provide local Field Representative to make periodic site visits, report work quality, and job progress.
6. Provide Warranty / Technical inspector employed by the manufacturer to provide full or part time inspection as required by Owner.
7. The presence and activity of the manufacturer's / specifier's representative and/or Owner representative shall in no way relieve the contractor of contract responsibilities or duties.

C. Plans and specifications:

1. Contractor must notify Owner and the specifier of any omissions, contradictions or conflicts seven (7) days before bid date. Owner and the specifier will provide necessary corrections or additions to plans and specifications by addendum. If Contractor does not so notify the Owner and specifier of any such condition, it will be assumed that the Contractor has included the necessary items in the bid to complete this specification.
2. It is the intent that this be a completed project as far as the contract documents set forth. It is not the intent that different phases of work on this project be delegated to various trades and subcontractors by the contract documents. Contractor must make own contracts with various subcontractors, setting forth the work these subcontractors will be held responsible for. Contractor alone will be held responsible by the owner for the completed project.
3. If the Contractor feels a conflict exists between what is considered good roofing practice and these specifications contractor shall state in writing all objections prior to submitting quotations.
4. It is the Contractor's responsibility during the course of the work, to bring to the attention of and notify the Owner representative first verbally, then in writing, of any defective membrane, insulation or deck discovered where not previously identified.

- D. Source Limitations: Obtain components for roofing system from or approved by roof system manufacturer.

#### 1.04 SUBMITTALS

- A. PRODUCT DATA: Submit for all products.
- B. MSDS: Submit for all products.

#### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Delivery of materials:
  - 1. Deliver materials to job-site in new, dry, unopened, and well-marked containers showing product and manufacturer's name.
  - 2. Deliver materials in sufficient quantity to allow continuity of work.
  - 3. Coordinate delivery with the Owner.
- B. Do not order project materials or start work before receiving Owner's written approval.
- C. Storage of materials:
  - 1. Store materials marked "KEEP FROM FREEZING" in areas where temperatures will remain above 40F.
  - 2. For insulation, remove plastic packaging shrouds. For felt rolls, slit the top of the plastic shrink wrap only. Cover top and sides of all stored materials with tarpaulin (not polyethylene). Secure tarpaulin.
  - 3. Do not store materials in open or in contact with ground or roof surface.
  - 4. Store all materials on a raised platform covered with secured canvas tarpaulin (not polyethylene), top to bottom. Cover all materials when project is not in progress and maintain the ability at all times to cover the materials when required, such as during an unanticipated rain shower.
  - 5. Contractor shall assume full responsibility for the protection and safekeeping of products stored on premises.
  - 6. **Storage of materials to be coordinated with Owner. Any materials stored on roof will be secured at all times.**
- D. Material handling:
  - 1. Handle materials to avoid bending, tearing, or other damage during transportation and installation.
  - 2. Material handling equipment shall be selected and operated so as not to damage existing construction or applied roofing. Do

not operate or situate material handling equipment in locations that will hinder smooth flow of vehicular or pedestrian traffic.

#### 1.06 SITE CONDITIONS

- A. Field measurements and material quantities:
  - 1. Contractor shall have **SOLE** responsibility for accuracy of all measurements, estimates of material quantities and sizes, and site conditions that will affect work.
- B. Existing conditions:
  - 1. Building space directly under roof area covered by this specification will be utilized by on-going operations. Do not interrupt building operations unless prior written approval is received from authorized personnel.
  - 2. **Take appropriate measures to prevent dust, vapors, gases or odors from entering the building during roof repair or application of primer or coating.**
- C. Waste Disposal:
  - 1. Do not re-use, re-cycle or dispose of material manufacturers product containers except in accordance with all applicable regulations. The user of manufactured products is responsible for proper use and disposal of product containers.
- 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, local and Owner fire and safety requirements.
  - 3. Advise Owner representative whenever work is expected to be hazardous to building occupants, employees, and/or operators.
  - 4. Maintain fire extinguisher within easy access whenever power tools, roofing kettles, fuels, solvents, torches, and open flames are being used.
- E. Environmental requirements:
  - 1. Do not work in rain, snow, or in presence of water.
  - 2. Do not install materials marked "KEEP FROM FREEZING" when daily temperatures are scheduled to fall below 40F.
  - 3. Do not perform masonry work below 40F.

4. Remove any work exposed to freezing.
  5. Advise Owner when volatile materials are to be used near air ventilation intakes so the Owner can use some or all of the following methods to minimize disruptions to building occupants and operations:
    - a. Divert air intake from work area by attaching scoops or temporary duct work.
    - b. Temporarily shut down or block air intakes.
    - c. Provide make-up air or intake air from sources away from work area.
- F. Security requirements:
1. Comply with Owner security requirements.
- G. Provide temporary sanitary facilities.

#### 1.07 WARRANTY/GUARANTEE

- A. Guarantee:
1. Upon project completion and Owner Representative acceptance, effective upon complete payment, Contractor shall issue Owner a guarantee against defective workmanship and materials for a period of two (2) years.
- B. Warranty:
1. Upon project completion, Manufacturer acceptance, and once complete payment has been received by both Contractor and Manufacturer, Manufacturer shall deliver to Owner a ten (10) year QA+ Warranty. This warranty will cover leaks during the warranty period, and will provide preventative maintenance and housekeeping visits during years 2 and 5 of the performance period.

## PART II - PRODUCTS

#### 2.01 GENERAL

- A. Comply with quality control, references, specifications, and manufacturer's data. Products containing asbestos are prohibited on this project. Use only asbestos-free products.
- B. Use products with personal protection. User must read container label and material safety data sheets prior to use.

## 2.02 ACCEPTABLE MANUFACTURER

- A. Tremco Inc., Cleveland, OH 216/292-5000.
  - 1. Bill Burke – Local Field Representative: (916) 990-5859.
- B. Or equal as determined by the Owner.

## 2.03 ROOFING MATERIALS

- A. Surface coating:
  - 1. High Build Reflective Roof Coating (HBRC) by Tremco.
- B. Flashing coating:
  - 1. High Build Reflective Roof Coating (HBRC) by Tremco.
- C. Related materials:
  - 1. Mastic:
    - a. ELS.
  - 2. Reinforcing Membrane:
    - a. Burmesh.
  - 3. Membrane primer:
    - a. SP Primer.
  - 4. Polyurethane Sealant:
    - a. Tremseal D.

## 2.04 WALL COATING MATERIALS

- A. Wall surfacing:
  - 1. Wall-Tite by Tremco.
    - a. Owner to select color.

## 2.05 COPING MATERIALS

- A. Sheet metal:
  - 1. 22 gauge Kynar coated metal copings.
    - a. Owner to select color.
  - 2. 22 gauge galvanized cleat.
- B. Lumber:
  - 1. 3/4" CDX, structural grade plywood decking.
  - 2. 2" x 4" pressure treated nailer.

- C. Waterproofing:
  - 1. Ice & Water Shield by Grace

## 2.06 FLASHINGS

- A. Parapet bracing flashings to be replaced with new, 4 lb lead flashings.

## PART III – EXECUTION

### 3.01 EXAMINATION

- A. Verify conditions as satisfactory to receive work.
- B. Do not begin roofing until all unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions.
- C. Check projections, curbs, and deck for inadequate anchorage, foreign material, moisture, or unevenness that would prevent quality and execution of new coating system.

### 3.02 GENERAL WORKMANSHIP

- A. All work performed by Contractor shall conform to this specification.
- B. The presence and activity of the manufacturer's representative, and/or Owner representative shall in no way relieve Contractor of contract responsibilities or duties.

### 3.03 PREPARATION

- A. Protection:
  - 1. Contractor shall be responsible for protection of property during course of work. Lawns, shrubbery, paved areas, and building shall be protected from damage. Repair damage at no extra cost to the Owner.
  - 2. Roofing, flashings, membrane repairs, and insulation shall be installed and sealed in a watertight manner on same day of installation or before arrival of inclement weather.
  - 3. Preparation work shall be limited to those areas that can be covered with installed roofing material on same day and before arrival of inclement weather.
- B. Surface preparation:
  - 1. Power wash roof and walls in preparation of new coatings.

### 3.04 REPAIRS PRIOR TO COATING APPLICATION

- A. Blisters:
  - 1. Slice blister to relieve pressure.
  - 2. Clean and prime area around blister repair.
  - 3. Pull back existing roof membrane and trowel-apply mastic under the plies prior to putting roof back into place.
  - 4. Apply 5-course repair with mastic and polyester over relief cut in the roof.
- B. Membrane splits:
  - 1. Clean and prime around the area to be repaired and install 5-course repair with mastic and polyester membrane.
- C. Loose or open laps in field ply sheets:
  - 1. Apply 3-course repair with mastic and polyester.
- D. Lead Flashings:
  - 1. Remove existing lead flashings and replace with new lead flashings.

### 3.05 BASE FLASHINGS

- A. Inspect base flashing membrane and repair in accordance with Membrane Repair instructions as necessary.

### 3.06 SURFACING TREATMENT ON FLASHINGS

- A. Coat base flashings per instructions listed in 3.07 Surfacing Application.
- B. Coat out all metal penetrations and vent caps.

### 3.07 SURFACING APPLICATION

- A. Roof surfacing:
  - 1. Over entire roof surface apply one coat of SP Primer at a rate of 300 sf per gallon.
  - 2. Over entire roof surface apply the surface coating of High Build acrylic polymer roof coating in a uniform and continuous manner according to manufacturer's recommendations.
    - a. Total coverage rate: 3 gallons per 100 square feet.
    - b. Apply in a two-coat process at 1.5 gallons per 100 square feet per coat.
- B. Wall surfacing:

1. Over concrete parapet wall surfaces, apply 2 coats of Wall-Tite at a rate of 1 gallon per 100 sf per coat.

### 3.08 COPING INSTALLATION

- A. Install new coping system over existing concrete parapet walls.
  1. Install new plywood decking and wood blocking per the attached detail.
  2. Install Ice & Water Shield waterproofing over the top of the wall, wrapping the bottom side of the nailer.
  3. Install the continuous cleat per the attached detail.
  4. Install new copings with hemmed drip edges and 1" standing seams. Mechanically attach the interior fascia to the nailer every 18".

### 3.09 ADJUSTING AND CLEANING

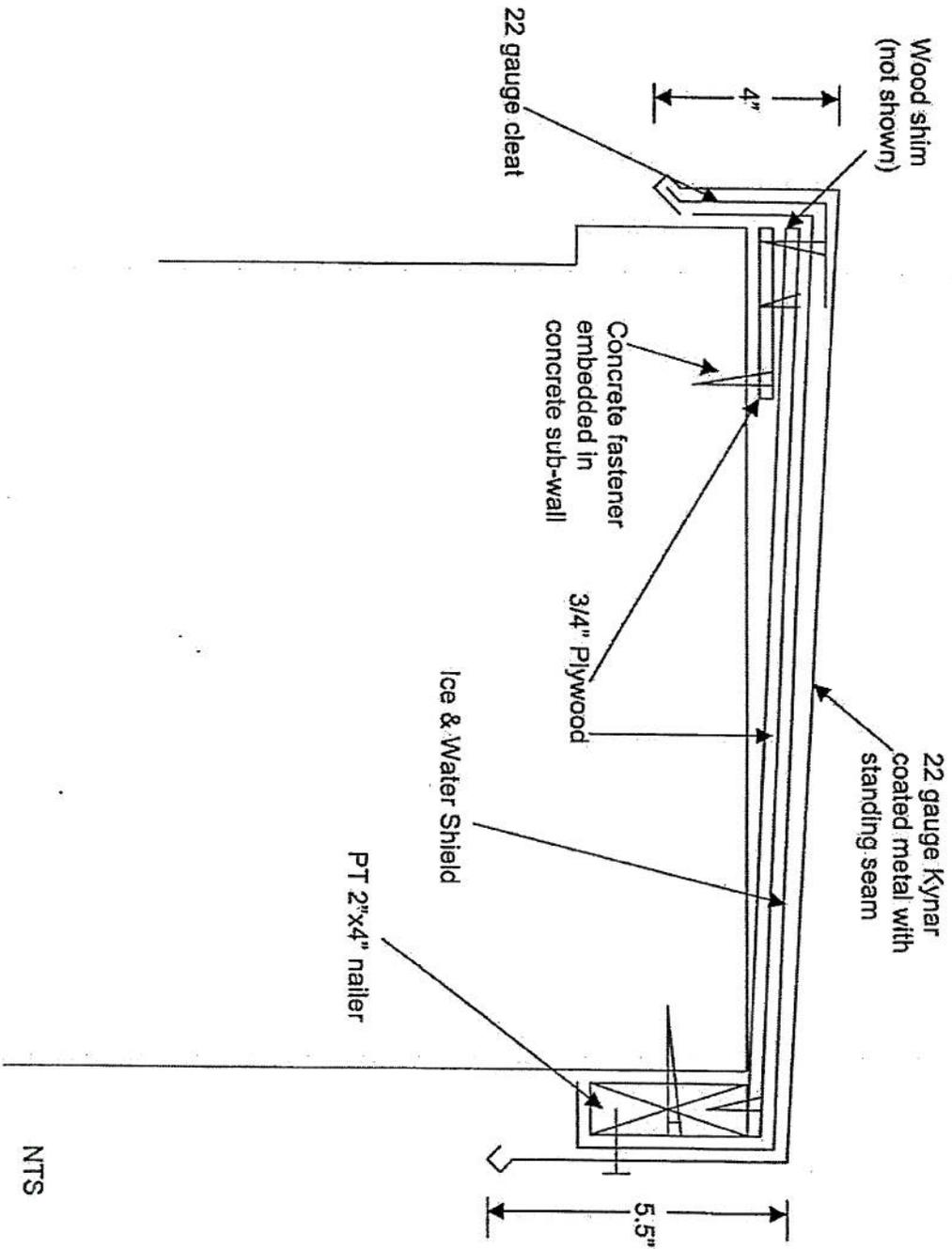
- A. Repair of deficiencies:
  1. Installations of details noted as deficient during final inspection must be repaired and corrected by applicator, and made ready for re-inspection, within five (5) working days.
- B. Clean-up:
  1. Immediately upon job completion, roof membrane and flashing surfaces shall be cleaned of debris.

### 3.10 PROJECT COMPLETION

- A. Manufacturer punch-list:
  1. Manufacturer will provide a punch-list at the close of the project. This punch-list must be completed by the contractor, prior to the project being warranted by the manufacturer, and final payment being made.

END OF SECTION

# Section A Parapet Wall Detail



## Memorial Auditorium

Date	Event
November 1, 2008	evening event
November 6, 2008	evening event
November 7, 2008	evening event
November 8, 2008	evening event
November 9, 2008	day event
November 11, 2008	day event
November 12, 2008	day event
November 13, 2008	day event
November 14, 2008	day event
November 15, 2008	day event
November 16, 2008	day event
November 19, 2008	day event
November 28, 2008	day event
December 1, 2008	evening event
December 2, 2008	day event
December 3, 2008	day event
December 6, 2008	evening event
December 17, 2008	day event
December 18, 2008	evening event
January 13, 2009	evening event
January 16, 2009	day event
January 17, 2009	day event
January 22, 2009	day event
January 23, 2009	day event
January 24, 2009	day event
January 25, 2009	evening event
January 27, 2009	day event

## Memorial Auditorium Roof Repairs SECTION B

### PART I - GENERAL

#### 1.01 Description

- A. This guide specification describes typical application methods for a mechanically attached 60-mil, TPA (Tri-Polymer Alloy) single ply roof system.
- B. Related Work
  - 1. Sheet Metal
  - 2. Sealants and Caulking
  - 3. Carpentry

#### 1.02 Scope of Work

- A. The roofing contractor shall furnish and install specified roofing and related components to the City of Sacramento.
- B. Work includes:
  - 1. Removal of base flashings, abandoned penetrations, parapet wall BUR and gutters.
  - 2. Installation of 1.5" polyisocyanurate.
  - 3. Installation of ¼" Dens-Deck mechanically attached to deck.
  - 4. Installation of new mechanically attached TPA membrane, gutters and flashings.
- C. The roof shall be left watertight with no exposed insulation at the end of each work day.
- D. Walk-pads will be installed as designated by Owner.

#### 1.03 Performance Requirements

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.

- C. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:
1. FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings.
  2. FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components.
  3. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details, as modified by FMG requirements indicated.
  4. SMACNA Architectural Sheet Metal Manual (Fifth Edition) for construction details.

#### 1.04 Quality Assurance

- A. Pre-installation Conference: Conduct conference at Project site(s). Review methods and procedures related to roofing system installation including, but not limited to, the following:
1. Meet with Owner Representative, Roof System Manufacturer's Representative, Installer, and installers whose work inter-faces with or affects roofing including installers of roof accessories and roof-mounted equipment.
  2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
  3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
  5. Review structural loading limitations of roof deck during and after roofing.
  6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
  7. Review governing regulations and requirements for insurance and certificates if applicable.
  8. Review temporary protection requirements for roofing system during and after installation.
  9. Review roof observation and repair procedures after roofing installation.
  10. Manufacturer to make a minimum of 3 spot inspections per week for the duration of the project. Written reports and photos to be emailed to the Owner after each visit.
- B. Source Limitations: Obtain components for membrane roofing system from or approved by Tremco.
- C. Upon completion of the installation, an authorized manufacturers' Technical Service Inspector shall inspect the completed roof to verify that the visible elements of the installation have been installed in accordance with the specifications, detail drawings, and approved changes.

### **1.05 Submittals**

- A. PRODUCT DATA: Spec data sheets for roofing materials.
- B. MSDS: For all roofing materials

### **1.06 Product Delivery, Storage and Handling**

- A. Materials shall be delivered in the original, unopened containers.
- B. All products shall be delivered to the job site with the manufacturer's labels on each roll or container. When required, the label shall also indicate the specified code/insurance approvals.
- C. All materials shall be stored flat, elevated from the roof or deck, protected with waterproof covers as necessary to keep the materials dry. The plastic wrap on the TPA rolls is not intended as a waterproof cover.
- D. All materials shall be protected from damage.
- E. Materials damaged in handling or storage shall not be used without authorization by the manufacturer. Unsalvageable materials shall be replaced at the contractor's expense.
- F. Material Safety Data Sheets, available from the manufacturer, shall be reviewed.
- G. Coordinate material storage with Owner. Materials stored on roof shall be secured at all times.

### **1.07 Job Conditions**

- A. TPA roofing systems shall not be installed during periods of precipitation. TPA membrane may be installed under certain adverse weather conditions (temperature and humidity), contact manufacturer for precautions that should be followed.
- B. Only as much of the new roofing as can be made weathertight each day shall be completed in accordance with the specifications, including all field flashings.
- C. All work shall be scheduled and executed without exposing the interior building area(s) to the effect of inclement weather. The existing building and its content shall be protected against all risks associated with installation of the roof system.
- D. All surface areas to receive new insulation, membrane or flashings, shall be thoroughly dry. Should surface moisture occur, the contractor shall provide necessary materials and equipment to dry the surface area affected prior to installation.

- E. All areas contaminated by dirt, debris, and dust shall be cleaned from surfaces by vacuuming, sweeping or power blowing.
- F. When storing material on the roof and during application, the roofing contractor shall ensure that overloading of the deck and structure does not occur.
- G. Any deteriorated deck or flashing substrate which is discovered shall be promptly reported to the City or designated representative.
- H. The roofing contractor shall investigate all existing gutter drain lines. Non-functioning drains shall be reported to the Owner prior to job start. It is the responsibility of the roofing contractor to insure adequate connection of the gutters to the drain lines.
- I. The roofing contractor shall investigate the structural deck on the building to determine the type and length of fastener required.
- J. If waste products, petroleum, grease, oil, solvents, mineral oil, and other contaminants come into contact with the TPA roofing membrane, contact manufacturer for precautions and cleaning procedures.
- K. Site clean-up, including both interior and exterior building areas that have been affected by the roof installation, shall be completed to the Owner's satisfaction. All landscaped areas affected shall be raked clean and seeded, as required.
- L. All roofing, insulation flashings and metal work removed during construction shall be immediately removed from the site to a regulated legal dumping area authorized to receive such materials.

#### **1.08 Hazardous Materials Handling**

- A. It shall be the responsibility of the contractor to identify, test, and isolate all areas of existing roof membrane and base flashings containing possible hazardous materials (Asbestos type).
- B. The roofing contractor shall remove all such materials and dispose of in accordance with all Federal (EPA & OSHA), State, and local regulatory agencies under an approved certified abatement program. All contractors' employees shall follow OSHA guidelines for handling such materials under the provisions of HCS (Hazardous Communications Standard) as required to conform to OSHA and other safety requirements.

#### **1.09 Warranty / Guarantee**

- A. Guarantee:

1. Upon project completion and Owner acceptance, effective upon complete payment, Contractor shall issue Owner a guarantee against defective workmanship and materials for a period of two (2) years.
- B. Warranty and Service Agreement:
1. Upon project completion, manufacturer acceptance, and once complete payment has been received by both Contractor and manufacturer, the manufacturer shall deliver to the Owner a ten (10) year Roofing System Quality Assurance Plus Warranty and Service Agreement. The manufacturer will, during the second and fifth year of this warranty service agreement, provide the following for the roof system:
    - a. Inspection by a Tremco Technical Service Representative and delivery of a written inspection report documenting roof conditions.
    - b. Preventive maintenance and necessary repairs, including splits, tears, or breaks in the roof membrane system and flashings which threaten the integrity of the roof system and are not exempt due to neglect, negligence, vandalism or some other exclusion.
    - c. General rooftop housekeeping and cleanup generally including the removal of debris.

## **PART II - PRODUCTS**

### **2.01 General**

- A. All components of the Tremco TPA Single Ply System shall be manufactured, supplied, or accepted in writing by Tremco or Owner approved equal manufacturer.

### **2.02 Tri-Polymer Alloy Membrane**

- A. The membrane shall be Tremco 60 mil TPA, a tri-polymer alloy, polyester reinforced roofing system as supplied by Tremco, Inc. or Owner approved equal. The sheet shall conform to the properties listed below. NOTE: The physical properties listed below are typical values.
  1. Color: White (top)/Gray (bottom)
  2. Roll Size: 78" wide x 90' long
  3. Weight: 4.5 oz. ft<sup>2</sup> (nominal)
  4. Thickness ASTM D-751: 60 mil (nominal)
  5. Breaking Strength ASTM D-751: 350 lbs x 325 lbs
  6. Seam Strength ASTM D-638: 90%
  7. Elongation @ Break ASTM D-751: 40% X 30%
  8. Heat Aging ASTM D-3045: 80% x 80%
  9. Tear Strength ASTM D-751: 100 lbs x 100 lbs
  10. Low Temperature Bend ASTM D-2136: Pass (-40 F)
  11. Permeance ASTM E-96: 0.003 Perms