City of Palo Alto
City Council Staff Report

(ID # 7686)

Report Type: Consent Calendar **Meeting Date: 3/20/2017**

Summary Title: Cubberley Community Center Auditorium Re-Roof Project

Title: Approval of a Construction Contract With Alcal Specialty Contracting, Inc. in an Amount Not-to-Exceed $364,728 to Provide Construction Services to Replace the Existing Roof at the Cubberley Community Center Auditorium Wing

From: City Manager

Lead Department: Public Works

Recommendation
Staff recommends that Council:

1. Approve and authorize the City Manager or his designee to execute a contract with Alcal Specialty Contracting, Inc. in an amount not to exceed $331,571 (Attachment A), for the Cubberley Community Center Auditorium Wing Roofing Replacement project, budgeted in the recurring Capital Improvement Project, Cubberley Roof Replacements (CB-16002); and
2. Authorize the City Manager or his designee to negotiate and execute one or more changes to the contract with Alcal Specialty Contracting, Inc. for related additional but unforeseen work, which may develop during the project, the total value of which shall not exceed $33,157.

Background
The existing mineral cap sheet roof on Cubberley Community Center Auditorium Wing is beyond its useful life and no longer meets code or Title 24 requirements. Leaking has caused extensive water damage throughout the auditorium and back kitchen area, increasing maintenance needs both to the roof and the interior spaces affected.

Discussion

This project will improve occupant health and safety and reduce maintenance costs. Under contract, Alcal Specialty Contracting, Inc. will remove the existing mineral cap sheet roofing system down to the plywood substrate, and the equipment from its current curb supports. Curbs will then be dismantled and rebuilt higher and the equipment reinstalled per the specifications (Attachment B).

Alcal Specialty Contracting, Inc. will provide and install a modified bituminous membrane roofing system throughout with R-9 insulation, new traffic crickets and drainage swells to direct rainwater to existing gutters, and walkway traffic pads to access rooftop mechanical equipment.

Bid Process

An Invitation for Bid for the project was posted on Planet Bids on November 17, 2016. The bid period was 28 calendar days. Seven bids were received on December 14, 2016 (Attachment C).

Summary of Solicitation Process	
Invitation For Bid (IFB) Published	11/17/2016
Mandatory Pre-Bid Site Walk	11/23/2016
Number of Company Attendees at Pre-Proposal Meeting	10
Number of Bids Received	7
Bid Opening	12/14/2016
Bid Proposal $ Range	$331,571 to $545,500

The bids ranged from a low of $331,571 to a high of $545,500 and are within range of the engineer's estimate. Staff has reviewed all bids submitted and recommends the base bid and allowances totaling $331,571 submitted by Alcal Specialty Contracting, Inc. be accepted and Alcal Specialty Contracting, Inc. be declared the lowest responsible bidder. The change order amount of $33,157, which equals ten percent of the total contract, is requested for related additional, but unforeseen work, which may develop during the project.

Resource Impact

Funding for this project was budgeted as part of the Fiscal Year 2017 Adopted Capital Budget in the recurring Capital Improvement Project, Cubberley Roof Replacements (CB-16002) in the Cubberley Property Infrastructure Fund.

Environmental Review

This project is categorically exempt from the California Environmental Quality Act (CEQA) under Section 15301c of the CEQA Guidelines as repair, maintenance and/or minor alteration of the existing facilities and no further environmental review is necessary.

Attachments:

- Attachment A - C17166667 Cubberley Auditorium Re Roof
- Attachment B - Cubb Auditorium Specs and Drawings
- Attachment C - Bid Summary

CONSTRUCTION CONTRACT

Contract No. C17166667

City of Palo Alto

"Cubberley Community Center Auditorium Re-roof" Project

CONSTRUCTION CONTRACT
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CONSTRUCTION CONTRACT

THIS CONSTRUCTION CONTRACT entered into on 20th day of February 2017 ("Execution Date") by and between the CITY OF PALO ALTO, a California chartered municipal corporation ("City"), and ALCAL SPECIALTY CONTRACTING INC. ("Contractor"), is made with reference to the following:

R E C I T A L S:

A. City is a municipal corporation duly organized and validly existing under the laws of the State of California with the power to carry on its business as it is now being conducted under the statutes of the State of California and the Charter of City.

B. Contractor is a corporation duly organized and in good standing in the State of Nevada, Contractor's License Number 815286 and Department of Industrial Relations Registration Number 1000000315. Contractor represents that it is duly licensed by the State of California and has the background, knowledge, experience and expertise to perform the obligations set forth in this Construction Contract.

C. On November 17, 2016, City issued an Invitation for Bids (IFB) to contractors for the Cubberley Community Center Auditorium Re-roof" ("Project"). In response to the IFB, Contractor submitted a Bid.

D. City and Contractor desire to enter into this Construction Contract for the Project, and other services as identified in the Contract Documents for the Project upon the following terms and conditions.

NOW THEREFORE, in consideration of the mutual promises and undertakings hereinafter set forth and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, it is mutually agreed by and between the undersigned parties as follows:

SECTION 1 INCORPORATION OF RECITALS AND DEFINITIONS.

1.1 Recitals.

All of the recitals are incorporated herein by reference.

1.2 Definitions.

Capitalized terms shall have the meanings set forth in this Construction Contract and/or in the General Conditions. If there is a conflict between the definitions in this Construction Contract and in the General Conditions, the definitions in this Construction Contract shall prevail.

SECTION 2 THE PROJECT.

The Project is the Cubberley Community Center Auditorium Re-roof Project, located at 4000 Middlefield Road, Palo Alto, CA 94306 ("Project").

SECTION 3 THE CONTRACT DOCUMENTS.

3.1 List of Documents.

The Contract Documents (sometimes collectively referred to as "Agreement" or "Bid Documents") consist of the following documents which are on file with the Purchasing Division and are hereby incorporated by reference.

1) Change Orders
2) Field Orders
3) Contract
4) Bidding Addenda
5) Special Provisions
6) General Conditions
7) Project Plans and Drawings
8) Technical Specifications
9) Instructions to Bidders
10) Invitation for Bids
11) Contractor's Bid/Non-Collusion Declaration
12) Reports listed in the Contract Documents
13) Public Works Department's Standard Drawings and Specifications (most current version at time of Bid)
14) Utilities Department's Water, Gas, Wastewater, Electric Utilities Standards (most current version at time of Bid)
15) City of Palo Alto Traffic Control Requirements
16) City of Palo Alto Truck Route Map and Regulations
17) Notice Inviting Pre-Qualification Statements, Pre-Qualification Statement, and Pre-Qualification Checklist (if applicable)
18) Performance and Payment Bonds

3.2 Order of Precedence.

For the purposes of construing, interpreting and resolving inconsistencies between and among the provisions of this Contract, the Contract Documents shall have the order of precedence as set forth in the preceding section. If a claimed inconsistency cannot be resolved through the order of precedence, the City shall have the sole power to decide which document or provision shall govern as may be in the best interests of the City.

SECTION 4 CONTRACTOR'S DUTY.

4.1 Contractor's Duties

Contractor agrees to perform all of the Work required for the Project, as specified in the Contract Documents, all of which are fully incorporated herein. Contractor shall provide, furnish, and supply all things necessary and incidental for the timely performance and completion of the Work, including, but not limited to, provision of all necessary labor, materials, equipment, transportation, and utilities, unless otherwise specified in the Contract Documents. Contractor also agrees to use its best efforts to complete the Work in a professional and expeditious manner and to meet or exceed the performance standards required by the Contract Documents.

SECTION 5 PROJECT TEAM.

5.1 Contractor's Co-operation.

In addition to Contractor, City has retained, or may retain, consultants and contractors to provide professional and technical consultation for the design and construction of the Project. The Contract requires that Contractor operate efficiently, effectively and cooperatively with City as well as all other members of the Project Team and other contractors retained by City to construct other portions of the Project.

SECTION 6 TIME OF COMPLETION.

6.1 Time Is of Essence.

Time is of the essence with respect to all time limits set forth in the Contract Documents.

6.2 Commencement of Work.

Contractor shall commence the Work on the date specified in City's Notice to Proceed.

6.3 Contract Time.

Work hereunder shall begin on the date specified on the City's Notice to Proceed and shall be completed within **sixty (60) calendar** days after the commencement date specified in City's Notice to Proceed.

By executing this Construction Contract, Contractor expressly waives any claim for delayed early completion.

6.4 Liquidated Damages.

Pursuant to Government Code Section 53069.85, if Contractor fails to achieve Substantial Completion of the entire Work within the Contract Time, including any approved extensions thereto, City may assess liquidated damages on a daily basis for each day of Unexcused Delay in achieving Substantial Completion, based on the amount of five hundred dollars ($500) per day, or as otherwise specified in the Special Provisions. Liquidated damages may also be separately assessed for failure to meet milestones specified elsewhere in the Contract Documents, regardless of impact on the time for achieving Substantial Completion. The assessment of liquidated damages is not a penalty but considered to be a reasonable estimate of the amount of damages City will suffer by delay in completion of the Work. The City is entitled

to setoff the amount of liquidated damages assessed against any payments otherwise due to Contractor, including, but not limited to, setoff against release of retention. If the total amount of liquidated damages assessed exceeds the amount of unreleased retention, City is entitled to recover the balance from Contractor or its sureties. Occupancy or use of the Project in whole or in part prior to Substantial Completion, shall not operate as a waiver of City's right to assess liquidated damages.

6.4.1 Other Remedies. City is entitled to any and all available legal and equitable remedies City may have where City's Losses are caused by any reason other than Contractor's failure to achieve Substantial Completion of the entire Work within the Contract Time.

6.5 Adjustments to Contract Time.

The Contract Time may only be adjusted for time extensions approved by City and memorialized in a Change Order approved in accordance with the requirements of the Contract Documents.

SECTION 7 COMPENSATION TO CONTRACTOR.

7.1 Contract Sum.

Contractor shall be compensated for satisfactory completion of the Work in compliance with the Contract Documents the Contract Sum of Three Hundred Thirty One Thousand Five Hundred Seventy One Dollars ($331,571.00).

☒ [This amount includes the Base Bid and Additive Alternates A2 and A3.]

7.2 Full Compensation.

The Contract Sum shall be full compensation to Contractor for all Work provided by Contractor and, except as otherwise expressly permitted by the terms of the Contract Documents, shall cover all Losses arising out of the nature of the Work or from the acts of the elements or any unforeseen difficulties or obstructions which may arise or be encountered in performance of the Work until its Acceptance by City, all risks connected with the Work, and any and all expenses incurred due to suspension or discontinuance of the Work, except as expressly provided herein. The Contract Sum may only be adjusted for Change Orders approved in accordance with the requirements of the Contract Documents.

SECTION 8 STANDARD OF CARE.

8.1 **Standard of Care.**

Contractor agrees that the Work shall be performed by qualified, experienced and well-supervised personnel. All services performed in connection with this Construction Contract shall be performed in a manner consistent with the standard of care under California law applicable to those who specialize in providing such services for projects of the type, scope and complexity of the Project.

SECTION 9 INDEMNIFICATION.

9.1 Hold Harmless.

To the fullest extent allowed by law, Contractor will defend, indemnify, and hold harmless City, its City Council, boards and commissions, officers, agents, employees, representatives and volunteers (hereinafter individually referred to as an "Indemnitee" and collectively referred to as "Indemnitees"), through legal counsel acceptable to City, from and against any and liability, loss, damage, claims, expenses (including, without limitation, attorney fees, expert witness fees, paralegal fees, and fees and costs of litigation or arbitration) (collectively, "Liability") of every nature arising out of or in connection with the acts or omissions of Contractor, its employees, Subcontractors, representatives, or agents, in performing the Work or its failure to comply with any of its obligations under the Contract, except such Liability caused by the active negligence, sole negligence, or willful misconduct of an Indemnitee. Contractor shall pay City for any costs City incurs to enforce this provision. Except as provided in Section 9.2 below, nothing in the Contract Documents shall be construed to give rise to any implied right of indemnity in favor of Contractor against City or any other Indemnitee.

Pursuant to Public Contract Code Section 9201, City shall timely notify Contractor upon receipt of any third-party claim relating to the Contract.

9.2 Survival.

The provisions of Section 9 shall survive the termination of this Construction Contract.

SECTION 10 NON-DISCRIMINATION.

10.1 **Municipal Code Requirement.**

As set forth in Palo Alto Municipal Code section 2.30.510, Contractor certifies that in the performance of this Agreement, it shall not discriminate in the employment of any person because of the race, skin color, gender, age, religion, disability, national origin, ancestry, sexual orientation, housing status, marital status, familial status, weight or height of such person. Contractor acknowledges that it has read and understands the provisions of Section 2.30.510 of the Palo Alto Municipal Code relating to Nondiscrimination Requirements and the penalties for violation thereof, and will comply with all requirements of Section 2.30.510 pertaining to nondiscrimination in employment.

SECTION 11 INSURANCE AND BONDS.

11.1 **Evidence of coverage.**

Within ten (10) business days following issuance of the Notice of Award, Contractor shall provide City with evidence that it has obtained insurance and shall submit Performance and Payment Bonds satisfying all requirements in Article 11 of the General Conditions.

SECTION 12 PROHIBITION AGAINST TRANSFERS.

12.1 **Assignment.**

City is entering into this Construction Contract in reliance upon the stated experience and qualifications of the Contractor and its Subcontractors set forth in Contractor's Bid. Accordingly, Contractor shall not assign, hypothecate or transfer this Construction Contract or any interest therein directly or indirectly, by operation of law or otherwise without the prior written consent of City. Any assignment, hypothecation or transfer without said consent shall be null and void, and shall be deemed a substantial breach of contract and grounds for default in addition to any other legal or equitable remedy available to the City.

12.2 **Assignment by Law.**

The sale, assignment, transfer or other disposition of any of the issued and outstanding capital stock of Contractor or of any general partner or joint venturer or syndicate member of Contractor, if the Contractor is a partnership or joint venture or syndicate or co-tenancy shall result in changing the control of Contractor, shall be construed as an assignment of this Construction Contract. Control means more than fifty percent (50%) of the voting power of the corporation or other entity.

SECTION 13 NOTICES.

13.1 **Method of Notice.**

All notices, demands, requests or approvals to be given under this Construction Contract shall be given in writing and shall be deemed served on the earlier of the following:

(i) On the date delivered if delivered personally;
(ii) On the third business day after the deposit thereof in the United States mail, postage prepaid, and addressed as hereinafter provided;
(iii) On the date sent if sent by facsimile transmission;
(iv) On the date sent if delivered by electronic mail; or
(v) On the date it is accepted or rejected if sent by certified mail.

13.2 **Notice to Recipients.**

All notices, demands or requests (including, without limitation, Change Order Requests and Claims) from Contractor to City shall include the Project name and the number of this Construction Contract and shall be addressed to City at:

To City: City of Palo Alto
City Clerk
250 Hamilton Avenue
P.O. Box 10250
Palo Alto, CA 94303

Copy to: ☒ City of Palo Alto
Public Works Administration
250 Hamilton Avenue
Palo Alto, CA 94301
Attn: Cecil Lectura

☐ City of Palo Alto
Utilities Engineering
250 Hamilton Avenue
Palo Alto, CA 94301
Attn:

In addition, copies of all Claims by Contractor under this Construction Contract shall be provided to the following:

Palo Alto City Attorney's Office

250 Hamilton Avenue
P.O. Box 10250
Palo Alto, California 94303

All Claims shall be delivered personally or sent by certified mail.

All notices, demands, requests or approvals from City to Contractor shall be addressed to:

Alcal Specialty Contracting Inc.
42950 Osgood Road
Fremont, CA 94538

13.3 Change of Address.

In advance of any change of address, Contractor shall notify City of the change of address in writing. Each party may, by written notice only, add, delete or replace any individuals to whom and addresses to which notice shall be provided.

SECTION 14 DEFAULT.

14.1 Notice of Default.

In the event that City determines, in its sole discretion, that Contractor has failed or refused to perform any of the obligations set forth in the Contract Documents, or is in breach of any provision of the Contract Documents, City may give written notice of default to Contractor in the manner specified for the giving of notices in the Construction Contract, with a copy to Contractor's performance bond surety.

14.2 Opportunity to Cure Default.

Except for emergencies, Contractor shall cure any default in performance of its obligations under the Contract Documents within two (2) Days (or such shorter time as City may reasonably require) after receipt of written notice. However, if the breach cannot be reasonably cured within such time, Contractor will commence to cure the breach within two (2) Days (or such shorter time as City may reasonably require) and will diligently and continuously prosecute such cure to completion within a reasonable time, which shall in no event be later than ten (10) Days after receipt of such written notice.

SECTION 15 CITY'S RIGHTS AND REMEDIES.

15.1 Remedies Upon Default.

If Contractor fails to cure any default of this Construction Contract within the time period set forth above in Section 14, then City may pursue any remedies available under law or equity, including, without limitation, the following:

15.1.1 Delete Certain Services. City may, without terminating the Construction Contract, delete certain portions of the Work, reserving to itself all rights to Losses related thereto.

15.1.2 Perform and Withhold. City may, without terminating the Construction Contract, engage others to perform the Work or portion of the Work that has not been adequately performed by Contractor and withhold the cost thereof to City from future payments to Contractor, reserving to itself all rights to Losses related thereto.

15.1.3 Suspend The Construction Contract. City may, without terminating the Construction Contract and reserving to itself all rights to Losses related thereto, suspend all or any portion of this Construction Contract for as long a period of time as City determines, in its sole discretion, appropriate, in which event City shall have no obligation to adjust the Contract Sum or Contract Time, and shall have no liability to Contractor for damages if City directs Contractor to resume Work.

15.1.4 Terminate the Construction Contract for Default. City shall have the right to terminate this Construction Contract, in whole or in part, upon the failure of Contractor to promptly cure any default as required by Section 14. City's election to terminate the Construction Contract for default shall be communicated by giving Contractor a written notice of termination in the manner specified for the giving of notices in the Construction Contract. Any notice of termination given to Contractor by City shall be effective immediately, unless otherwise provided therein.

15.1.5 Invoke the Performance Bond. City may, with or without terminating the Construction Contract and reserving to itself all rights to Losses related thereto, exercise its rights under the Performance Bond.

15.1.6 Additional Provisions. All of City's rights and remedies under this Construction Contract are cumulative, and shall be in addition to those rights and remedies available in law or in equity. Designation in the Contract Documents of certain breaches as material shall not waive the City's authority to designate other breaches as material nor limit City's right to terminate the Construction Contract, or prevent the City from terminating the Agreement for breaches that are not material. City's determination of whether there has been noncompliance with the Construction Contract so as to warrant exercise by City of its rights and remedies for default under the Construction Contract, shall be binding on all parties. No termination or action taken by City after such termination shall prejudice any other rights or remedies of City provided by law or equity or by the Contract Documents upon such termination; and City may proceed against Contractor to recover all liquidated damages and Losses suffered by City.

15.2 Delays by Sureties.

Time being of the essence in the performance of the Work, if Contractor's surety fails to arrange for completion of the Work in accordance with the Performance Bond, within seven (7) calendar days from the date of the notice of termination, Contractor's surety shall be deemed to have waived its right to complete the Work under the Contract, and City may immediately make arrangements for the completion of the Work through use of its own forces, by hiring a replacement contractor, or by any other means that City determines advisable under the circumstances. Contractor and its surety shall be jointly and severally

liable for any additional cost incurred by City to complete the Work following termination. In addition, City shall have the right to use any materials, supplies, and equipment belonging to Contractor and located at the Worksite for the purposes of completing the remaining Work.

15.3 Damages to City.

15.3.1 For Contractor's Default. City will be entitled to recovery of all Losses under law or equity in the event of Contractor's default under the Contract Documents.

15.3.2 Compensation for Losses. In the event that City's Losses arise from Contractor's default under the Contract Documents, City shall be entitled to deduct the cost of such Losses from monies otherwise payable to Contractor. If the Losses incurred by City exceed the amount payable, Contractor shall be liable to City for the difference and shall promptly remit same to City.

15.4 Suspension by City

15.4.1 Suspension for Convenience. City may, at any time and from time to time, without cause, order Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period of time, up to an aggregate of fifty percent (50%) of the Contract Time. The order shall be specifically identified as a Suspension Order by City. Upon receipt of a Suspension Order, Contractor shall, at City's expense, comply with the order and take all reasonable steps to minimize costs allocable to the Work covered by the Suspension Order. During the Suspension or extension of the Suspension, if any, City shall either cancel the Suspension Order or, by Change Order, delete the Work covered by the Suspension Order. If a Suspension Order is canceled or expires, Contractor shall resume and continue with the Work. A Change Order will be issued to cover any adjustments of the Contract Sum or the Contract Time necessarily caused by such suspension. A Suspension Order shall not be the exclusive method for City to stop the Work.

15.4.2 Suspension for Cause. In addition to all other remedies available to City, if Contractor fails to perform or correct work in accordance with the Contract Documents, City may immediately order the Work, or any portion thereof, suspended until the cause for the suspension has been eliminated to City's satisfaction. Contractor shall not be entitled to an increase in Contract Time or Contract Price for a suspension occasioned by Contractor's failure to comply with the Contract Documents. City's right to suspend the Work shall not give rise to a duty to suspend the Work, and City's failure to suspend the Work shall not constitute a defense to Contractor's failure to comply with the requirements of the Contract Documents.

15.5 Termination Without Cause.

City may, at its sole discretion and without cause, terminate this Construction Contract in part or in whole upon written notice to Contractor. Upon receipt of such notice, Contractor shall, at City's expense, comply with the notice and take all reasonable steps to minimize costs to close out and demobilize. The compensation allowed under this Paragraph 15.5 shall be the Contractor's sole and exclusive compensation for such termination and Contractor waives any claim for other compensation or Losses, including, but not limited to, loss of anticipated profits, loss of revenue, lost opportunity, or other consequential, direct, indirect or incidental damages of any kind resulting from termination without cause. Termination pursuant to this provision does not relieve Contractor or its sureties from any of their obligations for Losses arising from or related to the Work performed by Contractor.

15.5.1 Compensation. Following such termination and within forty-five (45) Days after receipt of a billing from Contractor seeking payment of sums authorized by this Paragraph 15.5.1, City shall pay the following to Contractor as Contractor's sole compensation for performance of the Work :

.1 For Work Performed. The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor.

.2 For Close-out Costs. Reasonable costs of Contractor and its Subcontractors:

(i) Demobilizing and

(ii) Administering the close-out of its participation in the Project (including, without limitation, all billing and accounting functions, not including attorney or expert fees) for a period of no longer than thirty (30) Days after receipt of the notice of termination.

.3 For Fabricated Items. Previously unpaid cost of any items delivered to the Project Site which were fabricated for subsequent incorporation in the Work.

.4 Profit Allowance. An allowance for profit calculated as four percent (4%) of the sum of the above items, provided Contractor can prove a likelihood that it would have made a profit if the Construction Contract had not been terminated.

15.5.2 Subcontractors. Contractor shall include provisions in all of its subcontracts, purchase orders and other contracts permitting termination for convenience by Contractor on terms that are consistent with this Construction Contract and that afford no greater rights of recovery against Contractor than are afforded to Contractor against City under this Section.

15.6 Contractor's Duties Upon Termination.

Upon receipt of a notice of termination for default or for convenience, Contractor shall, unless the notice directs otherwise, do the following:

(i) Immediately discontinue the Work to the extent specified in the notice;

(ii) Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work that is not discontinued;

(iii) Provide to City a description in writing, no later than fifteen (15) days after receipt of the notice of termination, of all subcontracts, purchase orders and contracts that are outstanding, including, without limitation, the terms of the original price, any changes, payments, balance owing, the status of the portion of the Work covered and a copy of the subcontract, purchase order or contract and any written changes, amendments or modifications thereto, together with such other information as City may determine necessary in order to decide whether to accept assignment of or request Contractor to terminate the subcontract, purchase order or contract;

(iv) Promptly assign to City those subcontracts, purchase orders or contracts, or portions thereof, that City elects to accept by assignment and cancel, on the most favorable terms reasonably possible, all subcontracts, purchase orders or contracts, or portions thereof, that City does not elect to accept by assignment; and

(v) Thereafter do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment on the Project Site or in transit thereto.

Upon termination, whether for cause or for convenience, the provisions of the Contract Documents remain in effect as to any Claim, indemnity obligation, warranties, guarantees,

submittals of as-built drawings, instructions, or manuals, or other such rights and obligations arising prior to the termination date.

SECTION 16 CONTRACTOR'S RIGHTS AND REMEDIES.

16.1 Contractor's Remedies.

Contractor may terminate this Construction Contract only upon the occurrence of one of the following:

16.1.1 For Work Stoppage. The Work is stopped for sixty (60) consecutive Days, through no act or fault of Contractor, any Subcontractor, or any employee or agent of Contractor or any Subcontractor, due to issuance of an order of a court or other public authority other than City having jurisdiction or due to an act of government, such as a declaration of a national emergency making material unavailable. This provision shall not apply to any work stoppage resulting from the City's issuance of a suspension notice issued either for cause or for convenience.

16.1.2 For City's Non-Payment. If City does not make pay Contractor undisputed sums within ninety (90) Days after receipt of notice from Contractor, Contractor may terminate the Construction Contract (30) days following a second notice to City of Contractor's intention to terminate the Construction Contract.

16.2 Damages to Contractor.

In the event of termination for cause by Contractor, City shall pay Contractor the sums provided for in Paragraph 15.5.1 above. Contractor agrees to accept such sums as its sole and exclusive compensation and agrees to waive any claim for other compensation or Losses, including, but not limited to, loss of anticipated profits, loss of revenue, lost opportunity, or other consequential, direct, indirect and incidental damages, of any kind.

SECTION 17 ACCOUNTING RECORDS.

17.1 Financial Management and City Access.

Contractor shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management under this Construction Contract in accordance with generally accepted accounting principles and practices. City and City's accountants during normal business hours, may inspect, audit and copy Contractor's records, books, estimates, take-offs, cost reports, ledgers, schedules, correspondence, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda and other data relating to this Project. Contractor shall retain these documents for a period of three (3) years after the later of (i) Final Payment or (ii) final resolution of all Contract Disputes and other disputes, or (iii) for such longer period as may be required by law.

17.2 Compliance with City Requests.

Contractor's compliance with any request by City pursuant to this Section 17 shall be a condition precedent to filing or maintenance of any legal action or proceeding by Contractor against City and to Contractor's right to receive further payments under the Contract Documents. City many enforce Contractor's obligation to provide access to City of its business and other records referred to in Section 17.1 for inspection or copying by issuance of a writ or a provisional or permanent mandatory injunction by a court of competent jurisdiction based on affidavits submitted to such court, without the necessity of oral testimony.

SECTION 18 INDEPENDENT PARTIES.

18.1 **Status of parties.**

Each party is acting in its independent capacity and not as agents, employees, partners, or joint ventures' of the other party. City, its officers or employees shall have no control over the conduct of Contractor or its respective agents, employees, subconsultants, or subcontractors, except as herein set forth.

SECTION 19 NUISANCE.

19.1 **Nuisance Prohibited.**

Contractor shall not maintain, commit, nor permit the maintenance or commission of any nuisance in connection in the performance of services under this Construction Contract.

SECTION 20 PERMITS AND LICENSES.

20.1 **Payment of Fees.**

Except as otherwise provided in the Special Provisions and Technical Specifications, The Contractor shall provide, procure and pay for all licenses, permits, and fees, required by the City or other government jurisdictions or agencies necessary to carry out and complete the Work. Payment of all costs and expenses for such licenses, permits, and fees shall be included in one or more Bid items. No other compensation shall be paid to the Contractor for these items or for delays caused by non-City inspectors or conditions set forth in the licenses or permits issued by other agencies.

SECTION 21 WAIVER.

21.1 **Waiver.**

A waiver by either party of any breach of any term, covenant, or condition contained herein shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein, whether of the same or a different character.

SECTION 22 GOVERNING LAW AND VENUE; COMPLIANCE WITH LAWS.

22.1 **Governing Law.**

This Construction Contract shall be construed in accordance with and governed by the laws of the State of California, and venue shall be in a court of competent jurisdiction in the County of Santa Clara, and no other place.

22.2 **Compliance with Laws.**

Contractor shall comply with all applicable federal and California laws and city laws, including, without limitation, ordinances and resolutions, in the performance of work under this Construction Contract.

22.2.1 **Palo Alto Minimum Wage Ordinance.** Contractor shall comply with all requirements of the Palo Alto Municipal Code Chapter 4.62 (Citywide Minimum Wage), as it may be amended from time to time. In particular, for any employee otherwise entitled to the State minimum wage, who performs at least two (2) hours of work in a calendar week within the geographic boundaries of the City, Contractor shall pay such employees no less than the minimum wage set forth in Palo Alto Municipal Code section 4.62.030 for each hour worked within the geographic boundaries of the City of Palo Alto. In addition, Contractor shall post notices regarding the Palo Alto Minimum Wage Ordinance in accordance with Palo Alto Municipal Code section 4.62.060.

SECTION 23 COMPLETE AGREEMENT.

23.1 **Integration.**

This Agreement represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, and contracts, either written or oral. This Agreement may be amended only by a written instrument, which is signed by the parties.

SECTION 24 SURVIVAL OF CONTRACT.

24.1 **Survival of Provisions.**

The provisions of the Construction Contract which by their nature survive termination of the Construction Contract or Final Completion, including, without limitation, all warranties, indemnities, payment obligations, and City's right to audit Contractor's books and records, shall remain in full force and effect after Final Completion or any termination of the Construction Contract.

SECTION 25 PREVAILING WAGES.

☐ This Project is not subject to prevailing wages. Contractor is not required to pay prevailing wages in the performance and implementation of the Project in accordance with SB 7, if the public works contract does not include a project of $25,000 or less, when the project is for construction work, or the contract does not include a project of $15,000 or less, when the project is for alteration, demolition, repair, or maintenance (collectively, 'improvement') work.

Or

☒ Contractor is required to pay general prevailing wages as defined in Subchapter 3, Title 8 of the California Code of Regulations and Section 16000 et seq. and Section 1773.1 of the California Labor Code. Pursuant to the provisions of Section 1773 of the Labor Code of the State of California, the City Council has obtained the general prevailing rate of per diem wages and the general rate for holiday and overtime work

in this locality for each craft, classification, or type of worker needed to execute the contract for this Project from the Director of the Department of Industrial Relations ("DIR"). Copies of these rates may be obtained at the Purchasing Division's office of the City of Palo Alto. Contractor shall provide a copy of prevailing wage rates to any staff or subcontractor hired, and shall pay the adopted prevailing wage rates as a minimum. Contractor shall comply with the provisions of all sections, including, but not limited to, Sections 1775, 1776, 1777.5, 1782, 1810, and 1813, of the Labor Code pertaining to prevailing wages.

SECTION 26 NON-APPROPRIATION.

26.1 **Appropriations.**

This Agreement is subject to the fiscal provisions of the Charter of the City of Palo Alto and the Palo Alto Municipal Code. This Agreement will terminate without any penalty (a) at the end of any fiscal year in the event that the City does not appropriate funds for the following fiscal year for this event, or (b) at any time within a fiscal year in the event that funds are only appropriated for a portion of the fiscal year and funds for this Construction Contract are no longer available. This section shall take precedence in the event of a conflict with any other covenant, term, condition, or provision of this Agreement.

SECTION 27 AUTHORITY.

27.1 **Representation of Parties.**

The individuals executing this Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective legal entities.

SECTION 28 COUNTERPARTS

28.1 **Multiple Counterparts.**

This Agreement may be signed in multiple counterparts, which shall, when executed by all the parties, constitute a single binding agreement.

SECTION 29 SEVERABILITY.

29.1 **Severability.**

In case a provision of this Construction Contract is held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not be affected.

SECTION 30 STATUTORY AND REGULATORY REFERENCES.

30.1 **Amendments to Laws.**

With respect to any amendments to any statutes or regulations referenced in these Contract Documents, the reference is deemed to be the version in effect on the date that the Contract was awarded by City, unless otherwise required by law.

SECTION 31 WORKERS' COMPENSATION CERTIFICATION.

31.1 **Workers Compensation.**

Pursuant to Labor Code Section 1861, by signing this Contract, Contractor certifies as follows:

"I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for 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 on this Contract."

SECTION 32 DIR REGISTRATION AND OTHER SB 854 REQUIREMENTS.

32.1 General Notice to Contractor.

City requires Contractor and its listed subcontractors to comply with the requirements of SB 854.

32.2 Labor Code section 1771.1(a)

City provides notice to Contractor of the requirements of California Labor Code section 1771.1(a), which reads:

"A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or Section 10164 or 20103.5 of the Public Contract Code, provided the contactor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded."

32.3 DIR Registration Required.

City will not accept a bid proposal from or enter into this Construction Contract with Contractor without proof that Contractor and its listed subcontractors are registered with the California Department of Industrial Relations ("DIR") to perform public work, subject to limited exceptions.

32.4 Posting of Job Site Notices.

City gives notice to Contractor and its listed subcontractors that Contractor is required to post all job site notices prescribed by law or regulation and Contractor is subject to SB 854-compliance monitoring and enforcement by DIR.

32.5 Payroll Records.

City requires Contractor and its listed subcontractors to comply with the requirements of Labor Code section 1776, including:

(i) Keep accurate payroll records, 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, respectively, Contractor and its listed subcontractors, in connection with the Project.

(ii) The payroll records shall be verified as true and correct and shall be certified and made available for inspection at all reasonable hours at the principal office of Contractor and its listed subcontractors, respectively.

(iii) At the request of City, acting by its project manager, Contractor and its listed subcontractors shall make the certified payroll records available for inspection or furnished upon request to the project manager within ten (10) days of receipt of City's request.

☐ City requests Contractor and its listed subcontractors to submit the certified payroll records to the project manager at the end of each week during the Project.

(iv) If the certified payroll records are not produced to the project manager within the 10-day period, then Contractor and its listed subcontractors shall be subject to a penalty of one hundred dollars ($100.00) per calendar day, or portion thereof, for each worker, and City shall withhold the sum total of penalties from the progress payment(s) then due and payable to Contractor. This provision supplements the provisions of Section 15 hereof.

(v) Inform the project manager of the location of contractor's and its listed subcontractors' payroll records (street address, city and county) at the commencement of the Project, and also provide notice to the project manager within five (5) business days of any change of location of those payroll records.

IN WITNESS WHEREOF, the parties have caused this Construction Contract to be executed the date and year first above written.

CITY OF PALO ALTO

_____
City Manager or designee

APPROVED AS TO FORM:

_____
City Attorney or designee

APPROVED:

_____
Public Works Director

ALCAL SPECIALTY CONTRACTING, INC.

By:_____

Name:_____

Title:_____

Date: _____

TECHNICAL SPECIFICATIONS
FOR
CUBBERLEY AUDITORIUM BUILDING RE-ROOF

AT
4000 MIDDLEFIELD ROAD
PALO ALTO, CALIFORNIA

October 27, 2016

Issued by: City of Palo Alto
Public Works Department
Public Services Division
Facilities Capital Improvement Projects

Prepared by: _____
Cecil R. Lectura
Project Engineer

Approved by: _____
Jimmy Y. Chen
Project Manager

TABLE OF CONTENTS

SECTION 01 11 00 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE OF WORK

The contractor shall be responsible for all labor, material, tools, equipment, and services necessary for removing existing mineral cap roof, as well as installing a new 2-ply roof system, on approximately 21,925 SF, at the Auditorium Building of the Cubberley Community Center, located at 4000 Middlefield Road, in Palo Alto, California. **Contractors bidding the project shall, at their discretion, measure and verify the roof areas during the mandatory bid walk.** The project includes but is not limited to the following:

A. Remove existing mineral cap roofing system down to the plywood substrate at three roof areas. Patch/repair substrate as necessary before installing modified bituminous membrane roofing over fiberboard over min. R-19 tapered, rigid insulation throughout roof (where noted on drawings) and around pipe and exhaust ductwork penetrations. Apply acrylic Title-24, CRRC-approved white or light-colored reflective coating over all roofing material areas as final step, after all other roof work completed.

B. Remove existing base assemblies of all roof-mounted HVAC equipment (where noted on drawings.) All equipment shall be re-installed onto new higher roof curbs per the drawings. Install crickets/drainage swales to direct rainwater away from units per the construction drawings.

C. Remove existing corroded exhaust vents and replace with galvanized metal vents of same size, type, etc. at same locations where noted on construction drawings.

D. Remove and replace all existing counter-flashing on perimeter walls adjacent to roof areas with new flashing. Caulk top of wall joints of counter-flashing as necessary, per requirements described in these specifications.

E. Remove and replace all existing galvanized edge metal perimeter flashing throughout roofs with new.

F. Remove all existing galvanized metal gutters and replace with appropriately sized similar gutters in same locations. Apply rust inhibitor to the inside of the gutters to prevent further oxidation. Reconnect all existing downspouts at same locations. Seal/prime/paint exterior sides/faces of all gutters to match existing conditions.

G. Remove and replace all conduit-topped and gas piping-topped wood sleepers and metal clamps with new rubber Durablok sleepers or approved equal (over rubber plates) with galv. metal clamps, at all three (3) roofs.

H. Strip existing peeling paint at existing fascia boards down to raw wood. Seal, prime, & paint entire fascias to match existing conditions. Temporarily remove existing security light fixtures on fascia boards and re-attach after roof work completed.

I. Install standard-size walkway traffic pads over new roof system, per the suggested plan configuration on the construction drawings. Install per manufacturer-recommended minimal distances between pads.

J. Install new galvanized wire mesh screen covers securely over pipe jacks, to prevent both vandalism and pest encroachment.

K. Install new plastic gutter screens at tree drip-line areas to match other existing onsite tree line gutter screens. Provide submittals for review/ approval prior to installation.

L. Verify and clear all roof drainage pipes servicing as downspouts. **There shall be no clogged drains prior to Final Inspection.**

1.2 RELATED WORK

Reference the drawings and specifications for this project.

1.3 PRE-BID CONFERENCE

A. The bidding Contractor shall attend a ***mandatory*** pre-bid meeting and job site visit, and be prepared to raise any questions he/she may have about the renovation area, methods, procedures, required inspections, plans, specifications, and the contract documents.

B. For substitution approval, bidding Contractor must first submit an RFI and get an approval prior to bid opening. An addendum will then be issued to all prospective bidders prior to bid opening.

C. Contractor requirements: Contractor State Licensing Board: Roofing (C-39).

1.4 PRE-CONSTRUCTION MEETING, SCHEDULE

The City shall schedule a pre-construction meeting to review the project with the Contractor. At the time of the meeting, the Contractor shall furnish to the Project Manager for review and approval, a Microsoft Project bar-graph schedule covering various phases of the operations, and all required submittals. The approved progress schedule shall be followed throughout the contract. The Contractor shall also provide emergency contact numbers for after-hours calls. Copies of all product data must be submitted and approved by the City of Palo Alto's Project Manager, prior to their installation.

1.5 CONSTRUCTION SCHEDULE

Contractor shall begin work within seven (7) calendar days after receiving the Notice to Proceed, and shall complete all work covered by this contract within 30 calendar days from the Notice to Proceed date.

If bad weather or unforeseeable site conditions occur, the Contractor may be granted extra days to complete the job only after a letter requesting for the time extension is submitted and approved by the Project Manager. Contractor shall adjust his schedule for any special events occurring at the site. No additional overhead will be paid.

The Contractor shall notify the City of Palo Alto's Project Manager at least five (5) working days prior to commencing work, when weather conditions allow for an uninterrupted, **45-day** appropriated rain-free or temperature-conflicting period of time.

All noise-producing demolition work shall be done during non-business hours. Building will be in use throughout construction. All utilities to areas outside the work area must be maintained. Maintain both ingress and egress to/from building at all times and clear walkways for public use (as applicable.)

1.6 PROTECTION OF EXISTING BUILDING

A. Contractor shall use proper and diligent care to protect any and all property belonging to the City of Palo Alto, or others, including existing buildings, doors, floors, walks, pavements, pipe systems, ceiling structures, etc. Contractor shall take all reasonable steps to minimize any dirt, noise, dust, traffic, or other problems, i.e. damage to surrounding property or buildings attributable to any action by the Contractor.

B. Contractor shall not overload any part of the premises or the building with any excess material or equipment. If so, he shall do so at his own risk and he shall be solely responsible for any and all loss, damage, and/or injury arising or resulting from the overloading. Protect interior floors and concrete sidewalks not only with heavy plywood sheets to evenly distribute trucks loads, but also when carting materials and debris over them.

1.7 SAFETY

A. Contractor is solely responsible for safety on the job site and shall follow all OSHA safety requirements, and all state safety regulations and orders.

1. Strictly observe safety precautions, and erect temporary barricades, warning lines, signs, and protective railings to protect persons in, around, and under the work areas. Dropping or throwing of objects from above is prohibited.

2. Follow NRCA and OSHA fire protection and prevention provisions including, but not limited to, those listed in OSHA 1962; Chapter 150, 151, 152, 153, and OSHA Chapter 110, 1191 – 110 as they apply to torch application. Comply with all federal, state, and local regulations.

1.8 DRAWINGS

A. The location and design of the required construction are shown on the drawings accompanying these Specifications. The following listed drawings are hereby made a part of these Specifications and this contract.

Sheet No.	Title	Date
A-1	Auditorium Bldg Roof Plan, Project Data	October 27, 2016
A-2	Roof Details	October 27, 2016

B. Any part of the work that is mentioned in either the specifications or on the drawings shall be understood by the Contractor to be part of the full scope of work to be done.

1.9 CONTRACT DOCUMENTS AT THE JOB SITE

The Contractor shall keep one copy of all the contract documents at the job site

in complete and good order. These shall be available to City representatives and public agencies having jurisdiction, and shall include all approved drawings, shop drawings, specifications, addenda, and change orders.

1.10 INCLUSION OF GENERAL CONDITIONS AND DIVISION ONE

Sections of Division 1 are a part of each and every section of these specifications and apply to each and every section as fully as if repeated in each case therein.

1.11 SITE INVESTIGATION

Contractor shall visit the site, verify the general and location conditions, and note all other matters that will affect the proposed work. Failure to do so will not relieve the Contractor from his responsibility of underestimating the difficulty or the cost of the work.

1.12 SITE CONDITIONS AND SURVEYS

Before beginning the work, the Contractor shall compare actual site conditions with the requirements of the drawings, and shall verify all existing conditions and dimensions. Any discrepancies should be reported immediately to the Project Manager before proceeding with any of the work. Data and information shown and indicated on the drawings should be field-verified.

1.13 CONTRACTOR SUPERVISION

Contractor’s Project Superintendent shall have full authority to make minor changes and shall be responsible for the supervision and direction of the construction area. Questions regarding ANY revisions shall be addressed to City's Project Manager via a written Request For Information (RFI). Project Superintendent shall be present on site daily.

1.14 COORDINATION OF WORK

Contractor shall coordinate all work with the City's Project Manager.

1.15 DESIGNATED CITY REPRESENTATIVE

A. All communications and interface, including written correspondence by the Contractor, shall be with the City of Palo Alto Facilities Rehabilitation Division, P.O. Box 10250, Palo Alto, CA 94303, phone (650) 496-6900,

ATTN: Cecil R. Lectura.

B. The Project Engineer is Cecil R. Lectura at (650) 496-6921.

1.16 WARRANTY

A. Contractor shall submit a warranty certificate, covering the roofing product for a period of twenty (20) years, from the date of final project acceptance. The certificate shall be included in the base bid proposal at no additional cost to the City.

B. Contractor shall also submit a contractor warranty certificate, covering work performed under this contract for a period of two (2) years from the date of final project acceptance. The certificate shall be included in the base bid proposal at no additional cost to the City.

1.17 PERSONNEL REQUIREMENTS

A. Contractor is required to have the Project Superintendent or lead onsite daily to manage the work during construction.

B. Proper protective gear is required at all time during construction. These include hard hats, safety goggles, sound and respiratory protection, safety gloves, safety shoes, and full-length clothing.

C. All Contractor's employees shall wear either badges or have clothing identified with the company's name.

D. Contractor is responsible for his/her employees and subcontractor's proper conduct, appearances, behavior and language used while on the job site.

E. **Copies of all current SDS for all components must be kept on site. Provide all crewmembers with appropriate safety data and training as is related to the specific chemical compound he or she may be expected to come in contact with. Each crewmember shall be fully aware of first-aid measures to be used in case of accidents**.

1.18 DELIVERY OF MATERIALS OR EQUIPMENT

Contractor is responsible for the storage of all equipment and materials. Contractor assumes all risk for storage of his/her materials.

END OF SECTION

SECTION 01 74 00 - TEMPORARY CONDITIONS

PART 1 - GENERAL

1.1 WATER, LIGHT AND POWER

All utilities shall be available to the Contractor for construction purposes at no charge. The Contractor is responsible for any temporary connections, extensions and distributions, including all wiring, piping, fittings, fixtures, devices, etc. Utilities must remain operational to all areas of the building at all times. Coordinate any required utilities shut down with Project Manager at least 48 hours in advance.

1.2 TEMPORARY SANITARY FACILITIES

Contractor shall provide and install, without extra cost to the City, one or more portable and lockable chemical toilet(s) located where permitted by the City and kept continually in sanitary odor-free condition during project. Remove portable toilet(s) on project completion. Place portable toilet(s) in conformance with applicable laws, codes, and regulations.

1.3 DELIVERY AND STORAGE OF MATERIALS AND EQUIPMENT

A. There will be a designated area for storage outside of the building and all the space in the work area is also available as storage space during construction. Material shall be neatly stored in the construction area.

B. The Contractor shall assume full responsibility for protection and safe keeping of any materials, tools, and equipment stored on City's property.

C. Store materials and equipment only in areas designated by the City for this purpose.

D. It is anticipated that Contractor's materials will be placed in the job area. The Contractor shall coordinate delivery requirements with the City Project Manager.

E. The Contractor shall be held fully responsible for safe mounting, use, storage and disassembly of the equipment; repair or restoration of the existing structure, its surfaces and finishes, landscaped areas and walkways, or other damage caused by the equipment.

1.4 DEBRIS AND CLEANING

A. Waste

All debris from demolition, framing removal, and other construction-related activities shall be carefully handled and discarded in a manner to minimize the generation of dirt and dust. Keep construction areas clean of waste material daily. All work areas shall be left broom-clean daily.

B. All debris shall be removed by Contractor or Contractor's employees. If debris boxes are used, they must be owned by Contractor or rented from Green Waste only. If rental debris boxes are used, they must be rented from the Palo Alto Sanitation Company (Green Waste), 2000 Geng Road, Palo Alto, CA (650) 493-4894.

C. Contractor shall recycle all possible construction debris, including packaging of new materials. Contractor shall comply with ***City's Green Building Ordinance***. Contractor shall register itself and the project on the City of Palo Alto's waste management website: greenhalosystems.com. Follow the instructions on the website to create and submit a plan, as well as to track the project's recycling efforts. Provide documentation & receipts of all recycled materials prior to final request for payment and for final inspection.

END OF SECTION

SECTION 01 77 00 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 CLOSEOUT PROCEDURES

A. When contractor considers work has reached final completion, including all change orders and punch list, submit written certification that: 1) contract documents have been reviewed, 2) work has been inspected, 3) work is complete and in accordance with contract documents, and 4) project is ready for Project Manager's inspection.

B. In addition to submittal required by the general conditions of the contract, submit a final statement of accounting, giving total adjusted contract sum. Project will not be considered complete until all project documents are submitted.

C. Return all keys and access badges to owner.

1.2 FINAL CLEANING

A. Execute prior to final inspection.

B. Clean all surfaces. Remove temporary labels, stains and foreign substances.

C. Remove waste and surplus materials, rubbish, and temporary facilities from the project site.

D. Re-do final cleaning if not cleaned to owner's standards.

1.3 WARRANTIES

Contractor shall assemble documents provided by subcontractors, suppliers, and manufacturers and file in a three ring binder with durable plastic cover. Provide a table of contents and warranty certificates covering 1) all roofing materials for 20 years, and 2) labor for two (2) years from the date of final project acceptance. Provide two (2) hard copies and one (1) electronic copy of all warranty documents for project closeout.

END OF SECTION

SECTION 02 41 00 - DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general requirements of the Contract, including General Requirements, Special Provisions and Division 1 Specification Sections, apply to this Section.

1.2 SCOPE OF WORK

Refer to constructions drawings for roof area designations:

A. Temporary removal of rooftop equipment (HVAC, exhaust vents) as required to re-install onto new, higher wood-framed bases.

B. Removal of corroded exhaust vents and vent assemblies.

C. Removal of all existing wood sleepers under both gas and electric pipes. Temporary shoring of piping to remove portions to raise height of horizontally-laid pipe runs.

D. Removal of all existing counter-flashing on perimeter walls adjacent to roof areas.

E. Removal of all existing roofing system: mineral cap roofing, asphalt underlayment, down to the plywood substrate.

F. Removal and disposal of all visible dry rot, after removing existing roofing system. Dry rot must be confirmed with the City's Project Engineer or Project Manager prior to removal and disposal.

G. Removal of all drip edge & gravel stop flashings and gutters where both rust is prevalent and where noted on construction drawings.

H. Removal of dry rot-damaged fascia boards as required for replacement.

1.3 REGULATORY REQUIREMENTS

A. Conform to applicable codes for removal of materials from site. Comply with all regulations and requirements for dust control and disposal.

1.4 PROJECT CONDITIONS

A. Owner's occupants will occupy portions of building immediately within affected areas. Conduct improvements so occupants' operations, as well as adjacent building's occupants, will not be disrupted. **All noise and odors-producing demolition and installation work shall be done during non-business hours.**

B. Maintain access to all walkways, corridors, and other adjacently occupied or used areas in and around the facility.

C. Provide, place, and maintain temporary barriers and security devices for safety of the occupants during the duration of the project.

D. Do not allow roof debris and construction materials to fall onto any walking area surfaces during the entire project. These include the interior floors, outdoor walkways, adjacent building's childcare play areas, and parking areas.

E. Ensure protection and use care with all roof-located antenna, cabling, and/or mechanical equipment. Contractor shall be responsible for any and all damage that occurs to this equipment.

F. Prevent debris from entering or blocking roof drains or plumbing vents.

1.5 WEATHER LIMITATIONS

A. Proceed with demolition only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

B. Contractor shall be responsible for any and all temporary weather proofing if required.

PART 2 - PRODUCTS

2.1 TEMPORARY ROOFING MATERIALS

Selection of materials and design of temporary roofing is responsibility of Contractor.

PART 3 - EXECUTION

3.1 DEMOLITION OF ROOFING MATERIAL

For removing roofing material and/or substrate, the contractor shall ensure that the following work practices are followed:

1. Worker sign-in and on-site safety talk.

2. Roofing material shall be removed in the most intact state as possible.

3. Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards.

4. Cutting machines shall be continuously misted during use, unless competent person determines that misting substantially decreases worker safety.

5. Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such a manner to avoid the dispersion of dust.

6. Roof level heating and ventilation air intake sources shall be isolated or the ventilation system shall he shut down.

3.2 DISPOSAL

A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Contractor shall comply with Palo Alto Municipal Code Chapter 5.24 Requirements to Divert Construction and Demolition Waste from Landfill and under heading 1.4, Section 01 74 00, “Temporary Conditions”, located herein these Technical Specifications.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.0 SCOPE OF WORK

Contractor shall furnish all labor, materials, tools, and equipment to remove and replace all worn and/or damaged framing supports and pipe sleepers. Replace all the existing electrical conduits sleepers with 2” x 4” or 4” x 4” D.F. pressure-treated wood sleepers and re-install pipe and conduits, as necessary. Replace wood fascias with like kind and length, upon discovery of either dry-rot or other damage.

1.1 RELATED SECTIONS

A. Section 02 41 00 - Demolition.

B. Section 07 51 13 - Cold-Applied Modified Bitumen Roofing

C. Section 07 60 00 - Flashing and Sheet Metal. General requirements for fabrication of sheet metal flashings and trim.

D. Section 07 92 00 - Joint Sealants: Sealing of all roof joints.

1.2 QUALITY ASSURANCE

A. Grading rules of the following associations apply to lumber furnished under this Section:

1. West Coast Lumber Inspection Bureau (WCLIB).

2. Western Wood Products Association (WWPA).

3. Redwood Inspection Service (RIS).

B. Plywood shall conform to Product Standard PS 1-74.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Immediately upon delivery to job site, place materials in area protected from weather.

B. Store materials & cover with protective waterproof covering, providing for adequate air circulation & ventilation. Polyethylene cover is unacceptable.

C. Do not allow materials to be exposed to any moisture during transportation, storage, handling and installation.

1.3 COORDINATION

Coordinate carpentry work with the work of other trades, ensuring timely performance of carpentry work as required to meet the construction schedule.

PART 2 - PRODUCTS

2.0 MATERIALS

A. Blocking, edgings, curbs attached to substrate framing and T&G decking boards: S4S, Douglas fir, Douglas Fir-larch, or Hem-Fir, No. 2 grade or better.

2.1 NAILS FOR STRUCTURE

A. Nails shall be as per NRCA and UBC, and JM roof manufacturer.

PART 3 - EXECUTION

3.0 DESCRIPTION

A. All workmanship shall be in accordance with the best practice, shall be accurate, with exact measurements and layout and shall be performed in a neat and careful fashion.

B. Where necessary to avoid splitting, nail holes shall be sub-bored. Split pieces shall be removed and replaced.

C. Cleaning up - Upon completion of his work, the Contractor shall remove all staging and other apparatus used in the work. Contractor shall also clean up and remove all scrap material and debris and leave the job and surrounding areas in a clean and workmanlike manner.

END OF DIVISION

SECTION 07 01 50 - THERMAL AND MOSTURE PROTECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Anchor sheet/roof deck protection.

1.02 RELATED SECTIONS

1. Section 06 10 00 - Rough Carpentry: Framing and wood decking.

2. Section 07 60 00 - Flashing and Sheet Metal: Sheet metal flashing; gutters and downspouts.

1.3 REFERENCES

American Society for Testing and Materials (ASTM) - Annual Book of ASTM Standards:

A. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

B. Underwriters Laboratories (UL) - Roofing Systems and Materials Guide (TGFU R1306).

C. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - *Architectural Sheet Metal Manual.*

D. Asphalt Roofing Manufacturers Association (ARMA)

E. National Roofing Contractors Association (NRCA)

F. U.S. Green Building Council (USGBC)

G. Leadership in Energy and Environmental Design (LEED)

H. Miami Dade County

1.4 DEFINITIONS

Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

1.5 LEED CERTIFICATION

Roofing Terminology: Refer to ASTM D1079 and the glossary of the National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual for definitions of roofing terms related to this section.

A. Provide a roofing system that will achieve or aid in the qualification of points satisfying

1. Materials & Resource credit 4 - Recycled Content.
2. Materials & Resource credit 5 - Local and Regional Materials.

1.6 SUBMITTALS

A. Product Data: Provide product data sheets for each type of product indicated in this section.

B. Shop Drawings: Provide manufacturers standard details and approved shop drawings for the tile roof underlayment specified.

C. Submit copies of GAFMC product data sheets, detail drawings and samples for each type of roofing product.

D. Certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

E. L.E.E.D. submittal: Coordinate with Section 01115 - Green Building Requirements, for LEED certification submittal forms and certification templates.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: GAFMC shall provide all primary roofing underlayment products, leak barrier, and ventilation, by a single manufacturer.

B. Installer Qualifications: Installer must be approved for installation of all roofing products to be installed under this section.

1.8 REGULATORY REQUIREMENTS

A. Exterior Fire Test Exposure: Provide a roofing system that will achieve an **Underwriters Laboratories** rating for roof slopes indicated.

1. UL Class A

B. Install all roofing products in accordance with all federal, state and local building codes.

C. All work shall be performed in a manner consistent with current OSHA guidelines.

1.9 PRE-INSTALLATION MEETING

A. General: For all projects in excess of 250 squares of roofing, a pre-installation meeting is strongly recommended.

B. Timing: The meeting shall take place at the start of the roofing installation, no more than 2 weeks into the roofing project.

C. Attendees: Meeting to be called for by manufacturer's certified contractor. Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative. Non-mandatory attendees shall include the owner's representative, architect or engineer's representative, and the general contractor's representative.

D. Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a GAFMC or BMCA® label.

B. Remove manufacturer supplied plastic covers from materials provided with such. Use “breathable” type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material is to be installed.

C. Store products in a covered, ventilated area, at temperature not more than 55 degrees F (12.6 degrees C).

D. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.

E. Store bundles on a flat surface. Maximum stacking height shall not exceed GAFMC’s recommendations. Store all rolls on end.

1.11 WEATHER CONDITIONS

A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with GAFMC’s recommendations.

1.12 WARRANTY

A. Provide GAFMC® **Blue Diamond Guarantee** where the manufacturer agrees to repair or replace the portion of the roofing materials, which have resulted in a leak due to a manufacturing defect or defects caused by ordinary wear and tear.

1. Duration: Twenty (20) years from the date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: GAFMC, 1361 Alps Rd. Wayne NJ 07470. Tel: 1-973-628-3000.

2.2 FIRE BARRIER SHEET

A. Non-woven fiberglass mat underlayment coated on both sides suing a highly filled polymer. Provides a fire barrier and water resistant. Approved by Dade Country, Florida Building Code, and ICC approval. Each roll contains approximately 3.5 squares (350 gross sq. ft.) of material and is 42" x 100' (1.07m x 30.5 ft). **VersaShield Underlayment®** by GAFMC.

2.3 ANCHOR SHEET

A. Premium, water repellant, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade Country, Florida Building Code, and ICC. Each roll contains approximately 10 squares (1003 sq. ft.) of material and is 54" x 223'. **Deck-Armor™** Premium Breathable Roof Deck Protection, by GAFMC.

2.4 ROOFING CEMENT & PRIMER

A. SBS Cement: ASTM D4586, **Matrix™ 201 Premium SBS Flashing Cement**, by GAFMC®.

B. Asphalt Primer: ASTM D41, **Matrix™ 307 Premium Asphalt Primer**, by GAFMC®.

C. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.5 NAILS

A. Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, smooth, barbed or deformed shank, with heads 3/8 inch (9mm) to 7/16 inch (11mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19mm) or through plywood or oriented strand board by at least 1/8 inch (3.18mm).

B. Plastic cap nails by others.

2.6 PLATES & SCREWS

A. Standard duty alloy steel insulation fastener with CR-10 coating with a .215" diameter thread. Factory Mutual Standard 4470 Approved, #3 Phillips head for use on steel and wood decks, **Drill•Tec™ Standard Screws** by GAFMC.

B. Galvalume coated steel 3" diameter plates. Miami Dade and Factory Mutual Standard 4470 Approved and suitable for use with Drill•Tec™ Philips head fasteners and Drill•Tec™ extra heavy duty fasteners. Made for east use with Drill•Tec™ AccuTrac stand up tool, **Drill•Tec™ Accuseam Plates** by GAFMC.

2.7 METAL FLASHING

A. 24 gauge hot-dip galvanized steel sheet, complying with ASTM A 653/A 653M, G90/Z275.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that the surfaces and site conditions are ready to receive work.

B. Verify that the deck is supported and secured.

C. Verify that the deck is clean, dry and smooth, free of ice or snow, depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

E. If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

3.02 GENERAL PREPARATION

A. Verify that the surfaces and site conditions are ready to receive work.

B. Verify that the deck is supported and secured.

C. Verify that the deck is clean, dry and smooth, free of ice or snow, depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

E. If roof deck preparation is the responsibility of another installer, notify the architect or building owner of unsatisfactory preparation before proceeding.

3.3 SUBSTRATE PREPARATION

A. Wood Deck (Plank / Heavy Timber)

1. Wood boards must be at least 1” nominal thickness and have a nominal width of 4’-6”. Tongue and groove or shiplap lumber is preferred to square edge material since subsequent shrinkage or warping of square edge planks may cause ridging of the roof system above adjacent boards.

2. Preservatives or fire retardants used to treat the decking must be compatible with roofing materials.

3. The deck must be installed over joists that are spaced 24” (61 cm) o.c. or less.

4. The deck must be installed so that all four sides of each panel bear on and are secured to joist and cross blocking. “H” clips are not acceptable.

5. Panels must be installed with a 1/8” to 1/4” (3mm – 6mm) gap between panels and must match vertically at joints to within 1/8” (3mm).

6. Decking should be kept dry and roofed promptly after installation.

END OF SECTION

SECTION 07 51 12 - MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. The attached are components of this section:

1. Preparation of substrate to receive roofing materials.
2. Roof insulation application to prepared substrate.
3. Roof membrane application.
4. Roof flashing application.
5. Incorporation of sheet metal flashing components and roofing accessories into the roof system.

1.2 PRODUCTS INSTALLED BUT NOT FURNISHED UNDER THIS SECTION

A. Sheet metal flashing and trim.

B. Sheet metal roofing specialties.

1.3 RELATED SECTIONS

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 60 00 - Flashing and Sheet Metal.

1.4 REFERENCE STANDARDS

A. References in these specifications to standards, test methods and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout this specification section.

ASTM - American Society for Testing and Materials; Philadelphia, PA.
FM - Factory Mutual Engineering and Research; Norwood, MA.
NRCA - National Roofing Contractors Association; Rosemont, IL.
OSHA - Occupational Safety and Health Administration; Washington, DC.
SMACNA - Sheet Metal and Air Conditioning Contractors National Association; Chantilly, VA.
UL - Underwriters Laboratories; Northbrook, IL.

1.5 DESCRIPTION OF WORK

A. The basic work description required in this specification includes the following:

1. Project Type: Tear-off.
2. Deck: Plywood. Existing slope is 1/4 inch per foot.
3. Insulation - bottom layer: Polyisocyanurate, tapered, having a thickness up to 2 inches, mechanically attached simultaneously with the top layer of insulation.
4. Insulation - top layer: High density fiberboard, having a thickness of 1/2 inch, mechanically attached.
5. Roof System: SBS Modified Bituminous Membrane system as described in Part 2 of these Specifications.
6. Flashing System: Metal-Clad Modified Bitumen Flashing Sheet as described in Part 2 of these Specifications.

1.6 SUBMITTALS

A. All submittals which do not conform to the following requirements will be rejected.

B. Submittal with Bid: Submit a price per square foot to provide and apply additional layers of Paradiene 20 in VOC compliant adhesive as necessary to treat low-lying areas where ponding water my accumulate. The areas shall be identified by the Owner’s representative.

C. Submittal of Equals: Submit primary roof systems to be considered as equals to the specified roof system in accordance with Section 01630. Primary roof systems which have been reviewed and accepted as equals to the specified roof system will be listed in an addendum prior to bid date; only then will equals be accepted at bidding. Submittals shall include the following:

1. Two 3 inch x 5 inch samples of the primary roofing and flashing sheets.

2. Latest edition of the roofing system manufacturer's specifications and installation instructions.

3. Evidence that the manufacturer of the proposed roofing system utilizes a quality management system that is ISO 9001 certified. Documentation of ISO 9001 certification of foreign subsidiaries without domestic certification will not be accepted.

4. Evidence and description of manufacturer's quality control/quality

assurance program for the primary roofing products supplied. The quality assurance program description shall include all methods of testing for physical and mechanical property values. Provide confirmation of manufacturer's certificate of analysis for reporting the tested values of the actual material being supplied for the project prior to issuance of the specified guarantee.

5. Descriptive list of the materials proposed for use.

6. Evidence of Underwriters' Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt or cold adhesive) without additional requirements for gravel or coatings. No other testing agency approvals will be accepted.

7. Letter from the proposed primary roofing manufacturer confirming that a phased roof application, with only the modified bitumen base ply in place for a period of up to 10 weeks, is acceptable and approved for this project.

8. List of 3 of the proposed primary roofing manufacturer's projects, located in the United States, of equal size and degree of difficulty which have been performing successfully for a period of at least 10 years.

9. Letter from the proposed primary roofing manufacturer confirming that the filler content in the elastomeric blend of the proposed roof membrane and flashing components does not exceed 35% in weight.

10. Complete list of material physical and mechanical properties for each sheet including: weights and thicknesses; low temperature flexibility; peak load; ultimate elongation; dimensional stability; compound stability; high temperature stability; granule embedment and resistance to thermal shock for foil faced products.

11. Evidence that the roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147.

12. Sample copy of the proposed guarantee.

D. Submittals Prior to Contract Award:

1. Letter from the proposed primary roofing manufacturer confirming that the bidder is an acceptable Contractor authorized to install the proposed system.

2. Letter from the primary roofing manufacturer stating that the proposed application will comply with the manufacturer's requirements in order to qualify the project for the specified guarantee.

E. Submittals Prior to Project Close-out:

1. Certificate Of Analysis from the testing laboratory of the primary roofing materials manufacturer, confirming the physical and mechanical properties of the roofing membrane components. Testing shall be in accordance with the parameters published in ASTM D 5147 and ASTM D 7051 and indicate Quality Assurance/Quality Control data as required to meet the specified properties. A separate Certificate Of Analysis for each production run of material shall indicate the following information:

   a. Material type
   b. Lot number
   c. Production date
   d. Dimensions and Mass (indicate the lowest values recorded during the production run):
      - Roll length
      - Roll width
      - Selvage width
      - Total thickness
      - Thickness at selvage (coating thickness)
      - Weight

   e. Physical and Mechanical Properties:
      - Low temperature flexibility
      - Peak load
      - Ultimate Elongation
      - Dimensional stability
      - Compound Stability
      - Granule embedment
      - Resistance to thermal shock (foil faced products)

2. Manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

1.7 QUALITY ASSURANCE

A. Acceptable Products: Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years.

B. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third party auditor under the ISO 9001 audit process. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.

C. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.

1. Underwriters Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt or cold adhesive) without additional requirements for gravel or coatings.

2. The roof membrane system shall be eligible to achieve 1 credit point according to the SS Credit 7.2: Heat Island Effect: Roof as recorded in LEED – NC Version 2.2.

3. The roof membrane system shall meet the requirements for initial solar reflectance of the U.S. EPA Energy Star program.

D. Acceptable Contractor: Contractor shall have a minimum of 2 years experience in successfully installing the same or similar roofing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.

E. Scope of Work: The work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the manufacturer of the primary roofing products. In addition, application practice shall comply with requirements and recommendations contained in the latest edition of the Handbook of Accepted Roofing Knowledge (HARK) as published by the National Roofing Contractor's Association, amended to include the acceptance of a phased roof system installation.

F. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.

G. Manufacturer Requirements: Ensure that the primary roofing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.

1.8 PRODUCT DELIVERY STORAGE AND HANDLING

A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.

B. Storage: Store materials out of direct exposure to the elements on pallets placed over clean, flat and dry surfaces. Storage of pallets over dirt, grass-covered ground or newly placed concrete may result in upward moisture transpiration and contamination of product. Store rolls of roofing on end. For roof-top storage, avoid overloading of deck and building structure. Factory packaging is not intended for job site protection. Slit factory packaging immediately upon arrival at the job site to prevent build-up of condensation and cover materials using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings shall not be used. Store flammable or temperature sensitive materials away from open flame, ignition sources or excessive heat.

C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.

D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, removed and replaced at the Contractor's expense.

1.9 PROJECT/SITE CONDITIONS

A. Requirements Prior to Job Start

1. Notification: Give a minimum of 5 days notice to the Owner and manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.

2. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the work.

3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.

B. Environmental Requirements

1. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.

2. Temperature Restrictions - asphalt: At ambient temperatures of 40°F (4°C) and below, special precautions must be taken to ensure that the specified Type IV asphalt maintains a minimum acceptable 400°F (204°C) at the point of sheet application. The asphalt must not be overheated to compensate for cold conditions. The use of insulated handling equipment is strongly recommended. Hot luggers, mop carts, and kettle-to-roof supply lines should be insulated. Hand mops should be constructed with a smaller yarn head to facilitate short moppings. Luggers and mop carts should never be more than half filled at all times.

3. Temperature Restrictions - cold adhesive: At low temperatures, the specified cold adhesive becomes more viscous, making even distribution more difficult. The optimal temperature of the adhesive at point of application is 70° - 100°F (21° - 38°C). To facilitate application when ambient temperatures are below 50°F (10°C), store the adhesive and roll goods in a warm place immediately prior to use. Bulk warmers, inline heaters, or other pre-heating equipment should be used to maintain the proper viscosity of the adhesive when using mechanical application equipment. Consider "flying in" the pre-cut roofing sheets in by placing them into the adhesive rather than rolling them into position. Roll or broom the sheets to ensure contact with the underlying adhesive. Suspend application in situations where the adhesive cannot be kept at temperatures allowing for even distribution.

4. Temperature Restrictions - self-adhered: The minimum required substrate temperature at point of application is 40°F (4°C). Maintain a minimum roof membrane material temperature above 60° F (16° C). In low temperature conditions, materials should be kept warm prior to application. In temperatures below 60° F (16° C) the specified tacky primer, required for vertical applications, should be considered to facilitate proper bonding of self-adhered membrane for horizontal applications. The minimum ambient temperature range at the time of tacky primer application is 45°F to 105°F (7°C - 40°C). Suspend

application in situations where the self-adhered base ply cannot be kept at temperatures allowing for proper adhesion.

C. Protection Requirements

1. Membrane Protection: Provide protection against staining and mechanical damage for newly applied roofing and adjacent surfaces throughout this project.

2. Torch Safety: Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractor's Association (NRCA), and follow torch safety practices as required by the contractor's insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew member shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.

3. Limited Access: Prevent access by the public to materials, tools and equipment during the course of the project.

4. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.

5. Site Condition: Complete, to the owner's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

1.10 GUARANTEE/WARRANTY

A. Roof Membrane Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the Owner with the Manufacturer's 20 year labor and materials membrane guarantee. The guarantee shall be a term type, without deductibles or limitations on coverage amount.

PART 2 PRODUCTS

2.1 RIGID ROOF INSULATION

A. Roof insulation shall be UL and FM approved for a minimum R-19 rating. Insulation shall be approved in writing by the insulation manufacturer for intended use and for use with the specified roof assembly.

1. Polyisocyanurate Board Insulation: A closed cell, rigid polyisocyanurate foam core material, integrally laminated between glass fiber facers, in full compliance with ASTM C 1289, Type II, Class 1, Grade 2. Panels shall be tapered and have a nominal thickness up to 2 inches with a minimum R value of 12. Acceptable types are as follows:

    a. Paratherm by Siplast; Irving, TX
    b. ACFoam II by Atlas Roofing Corporation; Atlanta, GA
    c. ENRGY 3 by Johns Manville, Inc.; Denver, CO
    d. H-Shield by Hunter Panels, LLC, Portland, ME
    e. Multi-Max FA by RMAX, Inc.; Dallas, TX

2. Fiberboard: A high density panel composed of interlocking wood fibers and waterproofing binders, having a top surface that is fire-rated. Panels shall have a nominal thickness of 1/4 inch. Acceptable types are as follows:

    a. Dens Deck Prime

2.2 DESCRIPTION OF ROOFING SYSTEM

A. Roofing Membrane Assembly: A roof membrane assembly consisting of two plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Reinforcement mats shall be impregnated/saturated and coated each side with SBS modified bitumen blend. The cross sectional area of the sheet material shall contain no oxidized or non-SBS modified bitumen. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.

1. The Basis Of Design System is Siplast Paradiene 20/30 CR FR roof system, consisting of the following:

    a. Base Ply – Paradiene 20.
    b. Reinforcing Ply – Paradiene 20.
    c. Finish Ply – Paradiene 30 CRFR.
    d. Flashing Sheet – Veral Aluminum.
    e. Adhesive – PA-311M.

2. Products manufactured by Johns Manville and Derbigum are approved for bidding as follows:

    a. Base Ply – Johns Manville DynaPly T1, Derbigum Derbicolor XPS-FR.
    b. Reinforcing Ply – Johns Manville DynaPly T1, Derbigum Derbicolor XPS-FR.
    c. Finish Ply – Johns Manville DynaKap CR FR, Derbigum Derbibrite.
    d. Flashing Sheet – Johns Manville Dyna Clad FR, Derbigum Derbibrite.
    e. Adhesive – Johns Manville MBR Cold Application Adhesive, Derbigum Permastic.

3. Modified Bitumen Base, Stripping, and Flashing Reinforcing Ply (Basis Of Design is Siplast Paradiene 20):

    a. Thickness (avg): 91 mils (2.3 mm) (ASTM D 5147)
    b. Thickness (min): 87 mils (2.2 mm) (ASTM D 5147)
    c. Weight (min per 100 ft^2 of coverage): 62 lb (3.0 kg/m^2)
    d. Maximum filler content in elastomeric blend - 35% by weight
    e. Low temperature flexibility @ -15°F (-26°C): PASS (ASTM D 5147)
    f. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
    g. Peak Load (avg) @ 0°F (-18°C): 70 lbf/inch (12.3 kN/m) (ASTM D 5147)
    h. Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)
    i. Dimensional Stability (max): 0.1% (ASTM D 5147)
    j. Compound Stability (min): 250°F (121°C) (ASTM D 5147)
    k. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
    l. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria

4. Modified Bitumen Finish Ply (Basis Of Design is Siplast Paradiene 30 CR FR):

a. Thickness (avg): 110 mils (2.8 mm) (ASTM D 5147)
b. Thickness at selvage (coating thickness) (avg): 98 mils (2.5 mm) (ASTM D 5147)
c. Thickness at selvage (coating thickness) (min): 94 mils (2.4 mm) (ASTM D 5147)
d. Weight (min per 100 ft^2 of coverage): 75 lb (3.6 kg/m^2)
e. Maximum filler content in elastomeric blend: 35% by weight
f. Low temperature flexibility @ -15° F (-26° C): PASS (ASTM D 5147)
g. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
h. Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
i. Ultimate Elongation (avg.) @ 73°F (23°C): 55% (ASTM D 5147)
j. Dimensional Stability (max): 0.1% (ASTM D 5147)
k. Compound Stability (min): 250°F (121° C) (ASTM D 5147)
l. Solar Reflectance: ≥ 0.70% (ASTM D 1549)
m. Thermal Emittance: ≥ 0.80% (ASTM D 1371)
n. Approvals: UL Class listed (product shall bear seals of approval)
o. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
p. Surfacing: white synthetic chips

B. Flashing Membrane Assembly (Basis Of Design is Siplast Veral flashing system, aluminum finish): A flashing membrane assembly consisting of a prefabricated, reinforced, Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane with a continuous, channel-embossed metal-foil surfacing. The finish ply shall conform to ASTM D 6298 and the following physical and mechanical property requirements.

1. Cant Backing Sheet and Flashing Reinforcing Ply (Basis Of Design is Siplast Paradiene 20 SA):

a. Thickness (avg): 102 mils (2.6 mm) (ASTM D 5147)
b. Thickness (min): 98 mils (2.5 mm) (ASTM D 5147)
c. Weight (min per 100 ft^2 of coverage): 72 lb (3.5 kg/m^2)
d. Maximum filler content in elastomeric blend: 35% by weight

e. Low temperature flexibility @ -15° F (-26° C) - PASS (ASTM D 5147)
f. Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
g. Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
h. Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)
i. Dimensional Stability (max): 0.1% (ASTM D 5147)
j. Compound Stability (min - sheet): 250°F (121°C) (ASTM D 5147)
k. Compound Stability (min – adhesive coating): 212°F (100°C) (ASTM D 5147)
l. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
m. Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
n. Back Surfacing: polyolefin film

2. Metal-Clad Modified Bitumen Flashing Sheet (Basis Of Design is Siplast Veral Aluminum):

a. Thickness (avg): 142 mils (3.6 mm) (ASTM D 5147)
b. Thickness (min): 138 mils (3.5 mm) (ASTM D 5147)
c. Weight (min per 100 ft² of coverage): 92 lb (4.5 kg/m²)
d. Coating Thickness – back surface (min): 40 mils (1 mm) (ASTM D 5147)
e. Low temperature flexibility @ 0° F (-18° C): PASS (ASTM D 5147)
f. Peak Load (avg) @ 73°F (23°C): 85 lbf/inch (15 kN/m) (ASTM D 5147)
g. Peak Load (avg) @ 0°F (-18°C): 180 lbf/inch (31.7 kN/m) (ASTM D 5147)

h. Ultimate Elongation (avg) @ 73°F (23°C): 45% (ASTM D 5147)
i. Tear-Strength (avg): 120 lbf (0.54 kN) (ASTM D 5147)
j. Dimensional Stability (max): 0.2% (ASTM D 5147)Stability

(min - sheet): 250°F (121°C) (ASTM D 5147)

k. Compound Stability (min): 225°F (107°C) (ASTM D 5147))

l. Cyclic Thermal Shock Stability (maximum): 0.2% (ASTM D 7051)

m. Approvals: UL Approved, FM Approved (products shall bear seals of approval)

n. Reinforcement: fiberglass scrim mat or other meeting the performance and dimensional stability criteria

o. Surfacing: aluminum metal foil

q. Surfacing: white synthetic chips

C. Catalyzed Acrylic Resin Flashing System (Basis Of Design is Siplast Parapro 123 Flashing System): A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non- woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

* NOTE: Unistrut supports are not a suitable substrate for the Parapro 123 Flashing System. Any unistrut type penetration that is required to be incorporated into the roofing system should be replaced by a solid square or angle iron penetration with a fully welded plate.

2.3 ROOFING ACCESSORIES

A. Roofing Adhesives

1. Membrane Cold Adhesive (Basis Of Design is Siplast PA-311 M Adhesive): An asphalt, solvent blend conforming to ASTM D 4479, Type II requirements.

B. Bituminous Cutback Materials

1. Primer: An asphalt, solvent blend conforming to ASTM D 41 requirements.

2. Primer for Self-Adhesive Sheets: A quick drying, low-VOC, water-based, high-tack primer specifically designed to promote adhesion of roofing and waterproofing sheets to approved substrates. Primer shall meet South Coast Air Quality District and Ozone Transport Commission requirements.

3. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586 Type II requirements.

C. Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials.

D. Synthetic Chips: Synthetic chips to match the factory applied reflective surfacing of the finish ply.

E. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4 inch dimension.

F. Fasteners

1. Insulation Fasteners: Insulation fasteners and plates shall be FM Approved, and/or approved by the manufacturer of the primary roofing products. The insulation fasteners shall provide attachment required to meet the specified uplift performance and to restrain the insulation panels against the potential for ridging. The fastening pattern for each insulation panel to be used shall be as recommended by the insulation manufacturer and approved by the manufacturer of the primary roofing products. Acceptable insulation fastener manufacturers for specific deck types are listed below.

a. Wood/Plywood Decks: Insulation mechanical fasteners for wood/plywood decks shall be factory coated for corrosion resistance. The fastener shall conform meet or exceed Factory Mutual Standard 4470 and when subjected to 30 Kesternich cycles, show less than 15% red rust. Acceptable insulation fastener types for wood/plywood decks are listed below.

1. A fluorocarbon coated screw type roofing fastener having a minimum 0.245 inch thread diameter. Plates used in conjunction with the fastener shall be a metal type having a minimum 3 inch diameter, as supplied by the fastener manufacturer.

2. Flashing Reinforcing Sheet Fasteners for Wood/Plywood Substrates to Receive Flashing Coverage: Fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable fasteners for specific substrate types are listed below.

    a. Wood/Plywood Substrates:

        1. A 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum 1 inch head.

G. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.

1. Thickness: 0.217 in (5.5 mm)
2. Weight: 1.8 lb/ft² (8.8 kg/m²)
3. Width: 30 in (76.2 cm)

PART 3 EXECUTION

3.1 PREPARATION

A. General: Sweep or vacuum all surfaces, removing all loose aggregate and foreign substances prior to commencement of roofing.

B. Remove All Existing:

1. Roof membrane
2. Insulation
3. Base flashings
4. Edge metal
5. Flanged metal flashings
6. Non functional penetrations/curbs
7. Drain assemblies
8. Metal trim, counterflashing
9. As further noted or described on Drawings

3.2 SUBSTRATE PREPARATION

A. Insulation: Install insulation panels with end joints offset; edges of the panels shall be in moderate contact without forcing applied in strict accordance with the insulation manufacturer's requirements and the following instructions. Where insulation is installed in two or more layers, stagger joints between

layers.

1. Insulation - double layer: Mechanically attach both layers simultaneously to the substrate, using the specified fasteners, at a rate of 1 fastener per 2 square feet of panel area (16 per 4' x 8' panel). Increase the fastening frequency by 50% at the perimeter of the roof and 100% in the corners. Stagger the panel joints between insulation layers.

3.3 ROOF MEMBRANE INSTALLATION

A. Membrane Application: Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of roofing membrane components shall immediately follow application of base sheet and/or insulation as a continuous operation.

B. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including synthetic chips and exercise care in ensuring that the finished application is acceptable to the Owner.

C. Priming with tacky primer: Apply the specified tacky primer by roller or spray in an even film. Refer to the manufacturer’s literature for the approved rate of application over various substrate types. Allow the primer to dry until it leaves a slightly sticky surface without transfer when touched.

D. Priming with asphaltic primer: Prime metal and concrete and masonry surfaces with a uniform coating of the specified asphalt primer.

E. Membrane Adhesive Application: Membrane adhesive can be applied by roller, squeegee or spray unit. Apply cold adhesive in a smooth, even, continuous layer without breaks or voids. Utilize an application rate of 2 to 2 1/2 gal/sq (0.6 to 1.0 l/m^2) over irregular or porous substrates. Utilize an application rate of 1 1/2 to 2 gal/sq (0.6 to 0.8 kg/m^2) for interply applications. Double the adhesive application rate at the end laps of granule surfaced sheets. In the areas surrounding details that are to receive the catalyzed acrylic resin primer and flashing system, follow the manufacturer’s alternative interply flashing detail.

F. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.

G. Roofing Application: Apply all layers of roofing free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets.

1. Apply all layers of roofing perpendicular to the slope of the deck.

2. Fully bond the base ply to the prepared substrate, utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the *[asphalt/torch/cold adhesive] applicator. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet.

3. Fully bond the finish ply to the base ply, utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the *[asphalt/torch/cold adhesive] applicator. Stagger end laps of the finish ply a minimum 3 feet. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger side laps of the finish ply a minimum 12 inches from side laps in the underlying base ply. Stagger end laps of the finish ply a minimum 3 feet from end laps in the underlying base ply.

   a. Maximum sheet lengths and special fastening of the specified roof membrane system may be required at various slope increments where the roof deck slope exceeds 1/2 inch per foot. The manufacturer shall provide acceptable sheet lengths and the required fastening schedule for all roofing sheet applications to applicable roof slopes.

H. Synthetic Chip Embedment: Broadcast synthetic chips over bitumen/adhesive overruns on the finish ply surface.

I. Flashing Application: Cut the cant backing sheet into 12 inch widths and peel the release film from the back of the sheet. Set the sheet into place over the primed substrate extending 6 inches onto the field of the roof area and 6 inches up the vertical surface utilizing minimum 3 inch laps. Set the non-combustible cant into place dry prior to installation of the roof membrane base ply. Flash walls and curbs using the reinforcing sheet and the metal foil flashing membrane. After the base ply has been applied to the top of the cant, prime the base ply surfaces to receive the reinforcing sheet. Fully adhere the reinforcing sheet, utilizing minimum 3 inch side laps onto the primed base ply surface and up the primed wall or curb to the desired flashing height. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using three foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the metal foil flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4 inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall or curb to the desired flashing height. Exert pressure on the flashing

sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on 9 inch centers. (See manufacturer's schematic for visual interpretation).

J. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer’s printed installer’s guidelines and other applicable written recommendations as provided by the manufacturer.

K. Water Cut-Off: At end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

L. Loose Chip Removal: Broom the surface of the finish ply in both machine and cross-machine direction using a stiff nylon bristle broom. Remove excess chips from the roof area.

3.4 ROOF SYSTEM INTERFACE WITH RELATED COMPONENTS

A. Walktread: Cut the walktread into maximum 5 foot lengths and allow to relax until flat. Adhere the sheet using the specified plastic cement. Apply the specified cement in a 3/8 inch thickness to the back of the product in 5 inch by 5 inch spots in accordance with the pattern as supplied by the walktread manufacturer. Walk-in each sheet after application to ensure proper adhesion. Use a minimum spacing of 2 inches between sheets to allow for proper drainage.

B. Sealant: Apply a smooth continuous bead of the specified sealant at the exposed finish ply edge transition to metal flashings incorporated into the roof system.

3.5 FIELD QUALITY CONTROL AND INSPECTIONS

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

B. Notification Of Completion: Notify the manufacturer by means of manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

C. Final Inspection

1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative Complete, sign, and mail the punch list form to the manufacturer's headquarters.

D. Issuance Of The Guarantee: Complete all post installation procedures and meet the manufacturer's final endorsement for issuance of the specified guarantee.

END OF SECTION

SECTION 07 60 00 - FLASHING AND SHEET METAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general requirements of the Contract, including General Conditions, Special Provisions and Division 1 Specification Sections, apply to this Section.

1.2 SCOPE OF WORK

A. Install both new continuous drip edge and gravel stop flashing.

B. Install new galvanized sheet metal gutters where noted and attach to existing downspouts on-site.

C. Replace corroded exhaust vents and vent assemblies with new galvanized sheet metal.

D. Miscellaneous sheet metal accessories. Install new galv. wire mesh screen covers securely over pipe jacks.

1.3 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Fabricate and install flashings and copings capable of resisting forces for the appropriate wind zone, per Factory Mutual's Loss Prevention Data Sheet 1-49.

C. Temperature Range: 120 deg F ambient; 180 deg F, material surface.

D. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the maximum range of ambient and surface temperatures provided above by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of sealant joints, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculations on surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.

E. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to the building interior.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: Describe material profiles, jointing pattern, jointing details, fastening methods, interface with other work and installation details.

1. Material.
2. Thickness of material.
3. Weight.
4. Finish.
5. Location of each item and details of expansion joint covers, including the direction of expansion and contraction.

1.5 QUALITY ASSURANCE

A. Comply with "Architectural Sheet Metal Manual" by SMACNA, for each general category of work required.

B. Applicator: Applicator who has complete sheet metal flashing and trim work similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance and with 5 years minimum experience.

C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with a suitable weather-tight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Recycled Content: Provide products made from steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is not less than the following:

1. Sheet Metal Flashings: Minimum 30 percent post-consumer recycled content.

B. Local/Regional Materials: Give preference to manufacturer's whose facilities are within a 500 mile radius of the project site. Also give preference to materials that are harvested, extracted, mined, quarried, etc. within a 500 mile radius of the project site.

2.2 MATERIALS

A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation; structural quality, mill-phosphatized where indicated for field painting.

1. Do not apply an acrylic passivator coating to galvanized sheet metal schedule to be painted, or remove this coating mechanically before delivery to the project site.

B. Sealant: ASTM C920, polyurethane-based sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

1. SikaFlex-15LM or equal

C. Flux: FS O-F-506.

D. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

E. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

F. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187.

G. Neoprene Flashing Components:

1. Manufacturer: Gaco Western, Inc. unless noted otherwise.

H. Solder:

1. For Zinc-Coated (Galvanized) Steel Sheet: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.

I. Bedding Compound: Rubber-asphalt type.

J. Plastic Cement: Asphaltic base cement.

K. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide elastic, non-sag, nontoxic, non-staining tape.

2.3 MANUFACTURED SHEET METAL FLASHING AND TRIM

A. Reglets: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counter-flashing pieces, and compatible with flashing indicated.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. Fry Reglet.
   b. MM Systems.
   c. Heckmann Building Products, Inc.
   d. Substitutions: Under provisions of Section 01630.
2. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers and with channel for sealant at top edge.
3. Stucco Type: Provide with upturned fastening flange and extension leg of length to match thickness of applied finish materials.
4. Flexible Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counter-flashing or where Drawings show reglet without metal counter-flashing.
5. Counter-flashing Wind-Restraint Clips: Provide clips to be installed before counter-flashing to prevent wind uplift of counter-flashing lower edge.

B. EPDM Flashing: Sheet flashing product made from ethylene-propylene-diene terpolymer, complying with ASTM D4637, 0.040-inch (1.0 mm) thick.

1. Available Products: Heckmann Building Products Inc.; No. 81 EPDM Thru-Wall Flashing.

2.4 FABRICATION

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.

B. Fabricate sheet metal with flat-lock seams; solder with type solder and flux recommended by manufacturer, except seal aluminum seams with sealant and, where required for strength, rivet seams and joints.

C. Fabricate sheet metal flashing and trim in thickness and weight needed to comply with performance requirements, but not less than that specified for each application of metal.

D. Fabricate corners, transitions, and terminations as a single unit; extend a minimum of 4-inches and a maximum of 8-inches in any direction.

E. Fabricate cleats and attachment devices from the same material as the accessory being anchored or from a compatible, non-corrosive metal. The thickness of these cleats and attachment devices should be as recommended by SMACNA's 'Architectural Sheet Metal Manual' and Factory Mutual's Loss Prevention Data Sheet 1-49 for the given application, but not less than the thickness of the metal being secured.

F. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.

G. Coat backside of fabricated sheet metal with 15-mil sulfur-free bituminous coating, SSPC-Paint 12, where required to separate metals from corrosive substrates, including cementitious materials, wood or other absorbent materials; or provide other permanent separation.

H. Provide for thermal expansion of running sheet metal work by overlaps of expansion joints in fabricated work. Where required for watertight construction, provide hooked flanges filled with polyisobutylene mastic for 1-inch embedment of flanges.

I. Space expansion joints at intervals of not more than 50-feet. Conceal expansion provisions where possible.

J. Roof-Penetration Flashing: Fabricate from the following material:
1. Galvanized Steel: 0.0276-inch (0.7 mm) thick.

2.5 MISCELLANEOUS SHEET METAL FABRICATIONS

A. Equipment Support Flashing: Fabricate from galvanized steel 0.0276-inch (0.7 mm) thick.

2.6 FINISHES

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

B. Finish: Standard (dull) mill finish; painted unless noted otherwise on Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

A. Allow wet substrates to dry thoroughly.

B. Clean debris from all substrates.

3.3 INSTALLATION

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Anchor work in place with non-corrosive fasteners, adhesives, setting compounds, tapes and other materials and devices as recommended by manufacturer of each material or system.

C. Install self-adhesive flashing prior to or in conjunction with sheet metal items, as shown on Drawings.

D. Provide for thermal expansion and building movements. Comply with recommendations of "Architectural Sheet Metal Manual" by SMACNA.

E. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

F. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

G. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

H. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

I. Composition Stripping: Cover flanges (edges) of work set on bituminous substrate with 5 courses of glass fiber fabric (ASTM D1668) set in and covered with asphaltic roofing cement.

J. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4-inches (32 mm) for nails and not less than 3/4-inch (19 mm) for wood screws.

1. Galvanized or pre-painted, Metallic-Coated Steel: Use stainless-steel fasteners.
2. Use concealed fasteners wherever possible. Exposed fasteners should have bonded neoprene washers or should be sealed.

K. Seal moving joints in metal work with butyl joint sealants, complying with requirements specified in Section 07920 as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1-inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).

L. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2-inches (38 mm) except where pre-tinned surface would show in finished Work.

1. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.
2. Clean metal surfaces of soldering flux and other substances that could cause corrosion.

3.4 MISCELLANEOUS FLASHING INSTALLATION

A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.5 CLEANING AND PROTECTION

A. Clean and neutralize flux materials. Clean off excess solder and sealants.

B. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

C. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

D. Performance: Watertight and weatherproof performance of flashing and sheet metal work is required.

END OF SECTION

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general requirements of the Contract, including General Conditions, Special Provisions and Division 1 Specification Sections, apply to this Section.

1.2 SCOPE OF WORK

A. The Work of this Section consist of furnishing and installing the following:

1. Exterior sealants.
2. Joint sealant primers and accessories.

1.3 RELATED SECTIONS

A. Section 076000 - Flashing and Sheet Metal: Sealant installation with flashings.

1.4 SUBMITTALS

A. Product Data: Provide data and installation instructions for each type of joint sealant required.

B. Certification by joint sealant manufacturer that sealants plus the primers and cleaners required for sealant installation comply with local regulations controlling use of volatile organic compounds (VOCs).

C. Submit manufacturer's letter of certification that products are appropriate for the uses intended.

1.5 QUALITY ASSURANCE

A. Sealant applicator shall specialize in the installation of joint sealants with a minimum of 2 years experience.

B. Elastomeric joint sealants shall be produced and installed to establish and to maintain watertight continuous seals without causing staining or deterioration of joint substrates.

C. Sealant manufacturer shall confirm in writing that all materials contacting the sealants, including joint backings, gaskets, spacers, and joint substrates, are compatible with the sealant to be installed. Schedule sufficient time to test these materials for compatibility with the sealant, as necessary. Compatibility tests shall be performed to the sealant manufacturer's standards.

D. Sealant manufacturer shall confirm in writing the appropriate joint preparation and priming techniques required to obtain rapid, acceptable adhesion of the joint sealants to the joint substrates.

E. Perform field adhesion testing of joint sealants to all surface types. Field adhesion testing shall be completed and results shall be reviewed and approved by sealant manufacturer and installer before commencing sealant installation.

F. Pre-installation meeting: Review joint application procedures, compatibility tests, adhesion tests, and warranty requirements in a meeting involving installer, manufacturer or manufacturer's representative, building owner or manager, consultant, and contractor.

G. Sealant manufacturer shall provide one announced and one unannounced quality control check/adhesion test with the sealant installer at the job site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials intact and legible.

B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer.
2. Below 40 deg F (4.4 deg C).
3. When joint substrates are wet or retaining moisture.

B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than allowed by joint sealant manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealants to match colors indicated by reference to manufacturer's standard designations.

C. Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated.

2.2 JOINT SEALANTS

A. Weatherproofing Sealant: Provide product complying ASTM C920, also with ASTM C1193 and tested under ASTM C719; Type S, Grade NS, Class 25; that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 50 percent, use at conventional glazing and for weatherproofing.

1. Dow Corning Corporation; Dow Corning 790, 791, or 795.
2. Tremco; Spectrem II or Spectrem III.
3. Pecora Corporation; 895.

B. Flashings Sealant: ASTM C920, Type S, Grade NS, Class 25; single component elastomeric accommodating joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

1. Dow Corning Corporation; Dow Corning 791, 795, or Contractors Weatherproofing Sealant.

C. Reglets and Flashings Sealant: ASTM C920, Type S, Grade NS, Class 25; single component elastomeric accommodating joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

1. Dow Corning Corporation; Dow Corning 791, 795, or Contractors Weatherproofing Sealant.

D. Self-Leveling Sealant: ASTM C920, Type S, Grade SL; single component, chemical curing, non-staining, non-bleeding, non-sagging type; color as selected; use in concrete expansion and control joints in parking garages, plaza and terrace decks, floor and sidewalk joints.

1. Dow Corning Corporation; Dow Corning 890SL.
2. Pecora Corporation; Urexpan NR-200 -.
3. Tremco; THC-900.
4. Sika Corporation, Inc.; Sikaflex 2C-FL.

2.3 JOINT SEALANT BACKING

A. General: Provide sealant backings and accessory materials, including primers, of material and type that are non-staining; are compatible with joint substrates, sealants, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Foam Joint Fillers: Non-gassing, preformed, compressible, resilient, non-staining, non-waxing, non-extruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control sealant depth, prevent three-sided adhesion, provide a surface against which to tool, and otherwise contribute to producing optimum sealant performance:

1. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin) or Type B (bicellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance and as recommended by sealant manufacturer.

2. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F (minus 32 deg C). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from pre-construction joint sealant-substrate tests and field tests. Certify that primer will not permanently stain adjacent joint surfaces.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints, to mask off adjacent joint surfaces where sealant is not permanently intended to be applied.

D. Bondbreaker Tape: Polyethylene pressure sensitive adhesive tape, to be used in areas where backer rod cannot fit and where three-sided adhesion is to be avoided.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint sealant performance.

B. Verify that joint sizes and surfaces are free of defects and acceptable for installation of joint sealants.

C. Verify joint dimensions and shapes to ensure they are within the sealant manufacturer's guidelines. Resolve any variances prior to installation. Do not proceed with sealant installation until the unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer.

B. Thoroughly clean the areas that the new sealant will contact using a de-greasing solvent such as toluene or xylene and the two-rag wipe technique. IPA (isopropyl alcohol) is not a degreasing solvent. The new sealant should have a minimum contact area of 1/4".

C. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

D. Clean porous joint substrate surfaces by oil-free brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Do not damage finished surface of materials while performing cleaning operations. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

E. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.

F. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 JOINT PRIMING

A. Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on pre-construction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations.

B. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Allow primer to dry. Do not prime areas that cannot be sealed the same day.

3.4 INSTALLATION OF SEALANT BACKINGS

A. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

B. Do not leave gaps between ends of joint fillers.

C. Do not stretch, twist, puncture, or tear joint fillers.

D. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.

E. Tolerances:

1. Minimum Sealant Contact Area: 1/4-inch.
2. Minimum Joint Depth: 1/4 $\pm$ 1/8-inch, with the joint width at least twice the joint depth to allow the sealant its maximum movement capability.

3.5 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations of ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.

D. Tooling of Non-sag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint configuration per Figure 5A in ASTM C1193, unless otherwise indicated.
4. Provide flush joint configuration where indicated per Figure 5B in ASTM C1193.

3.6 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed elastomeric sealant joints as follows:
   a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each type of elastomeric sealant and joint substrate.
2. Test Method: Test joint sealants as appropriate for type of joint-sealant application indicated.
   a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
4. Inspect tested joints and report on the following:
   a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
   b. Whether sealants filled joint cavities and are free of voids.
   c. Whether sealant dimensions and configurations comply with specified requirements.

5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.7 CLEANING

A. Construction Waste Management: Manage construction waste in accordance with provisions of Section 01524 Construction Waste Management. Submit documentation for Credit MR 2.1 and Credit MR 2.2to satisfy the requirements of that Section.

B. Clean off excess sealants and sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

C. Leave finished work in a neat, clean condition with no evidence of spillovers onto adjacent surfaces.

3.8 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion.

B. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 09 91 13 - EXTERIOR PAINTING AND FINISHING

PART 1 - GENERAL

1.0 WORK INCLUDED

A. Surface preparation for all new gutters, all wood roof fascia boards, existing pipe jacks, existing vents, existing non-galv. metal HVAC units, all counter-flashing, and supports above the roofline, etc.

B. Surface finish priming and painting of all new gutters, all wood roof fascia boards, existing pipe jacks, existing vents, existing non-galv. metal HVAC units, all counter-flashing, and all new wood and metals roof surfaces. Paint all items above to match existing.

1.1 RELATED WORK

A. Section 06 10 00 - Rough Carpentry.

B. Section 07 51 13 - Cold-applied Modified Bitumen Roofing

C. Section 07 60 00 - Flashing and Sheet Metal.

1.2 REFERENCES

A. ANSI/ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

B. ASTM D2016 - Test Method for Moisture Content of Wood.

1.3 DEFINITIONS

Conform to ANSI/ASTM D16 for interpretation of terms used in this section.

1.4 QUALITY ASSURANCE

A. Product Manufacturer - Company specializing in manufacturing quality paints and finish products with five years experience.

B. Applicator - Company or individual knowledgeable in commercial painting and finishing with five (5) years documented experience.

1.5 SUBMITTALS

A. Submit product data.

B. Provide product data on all finishing products.

C. Submit samples.

D. Submit manufacturer's application instructions.

1.6 ENVIRONMENTAL REQUIREMENTS

Do not apply exterior coatings during rain or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.

PART 2 - PRODUCTS

2.0 ACCEPTABLE MANUFACTURERS - PAINT

A. Kelly Moore or approved equal.

2.1 MATERIALS

Accessory Materials - Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

2.2 FINISHES

Refer to schedule at end of Section for surface finish schedule. Colors to match existing.

PART 3 - EXECUTION

3.0 INSPECTION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:

1. Fifteen percent (15%) measured in accordance with ASTM D2016.

D. Beginning of installation means acceptance of substrate.

3.1 PREPARATION

A. Correct minor defects and clean surfaces which affect work of the section.

B. Galvanized Surfaces - Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

3.2 PROTECTION

A. Protect elements surrounding the work of this section from damage or disfiguration. **At side adjacent to existing childcare center, it is vital that protection be provided from any work at the roof above. Coordinate with City of Palo Alto Project Manager for best alternatives.**

B. Repair damage to other surfaces caused by work of this section.

C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Sand lightly between coats to achieve required finish.

C. Allow applied coat to dry before next coat is applied.

D. Prime back surfaces of exterior woodwork with primer paint.

3.4 CLEANING

A. As work proceeds, promptly remove paint where spilled, splashed, or spattered.

B. Collect cotton waste, cloths and material, which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.5 SCHEDULE - EXTERIOR SURFACES

A. Wood - Painted

1. One coat primer, 2201722 latex

2. Two coats exterior paint, 1250 acrylic latex

B. Steel - Unprimed

1. One coat zinc chromate primer, 1710 red oxide

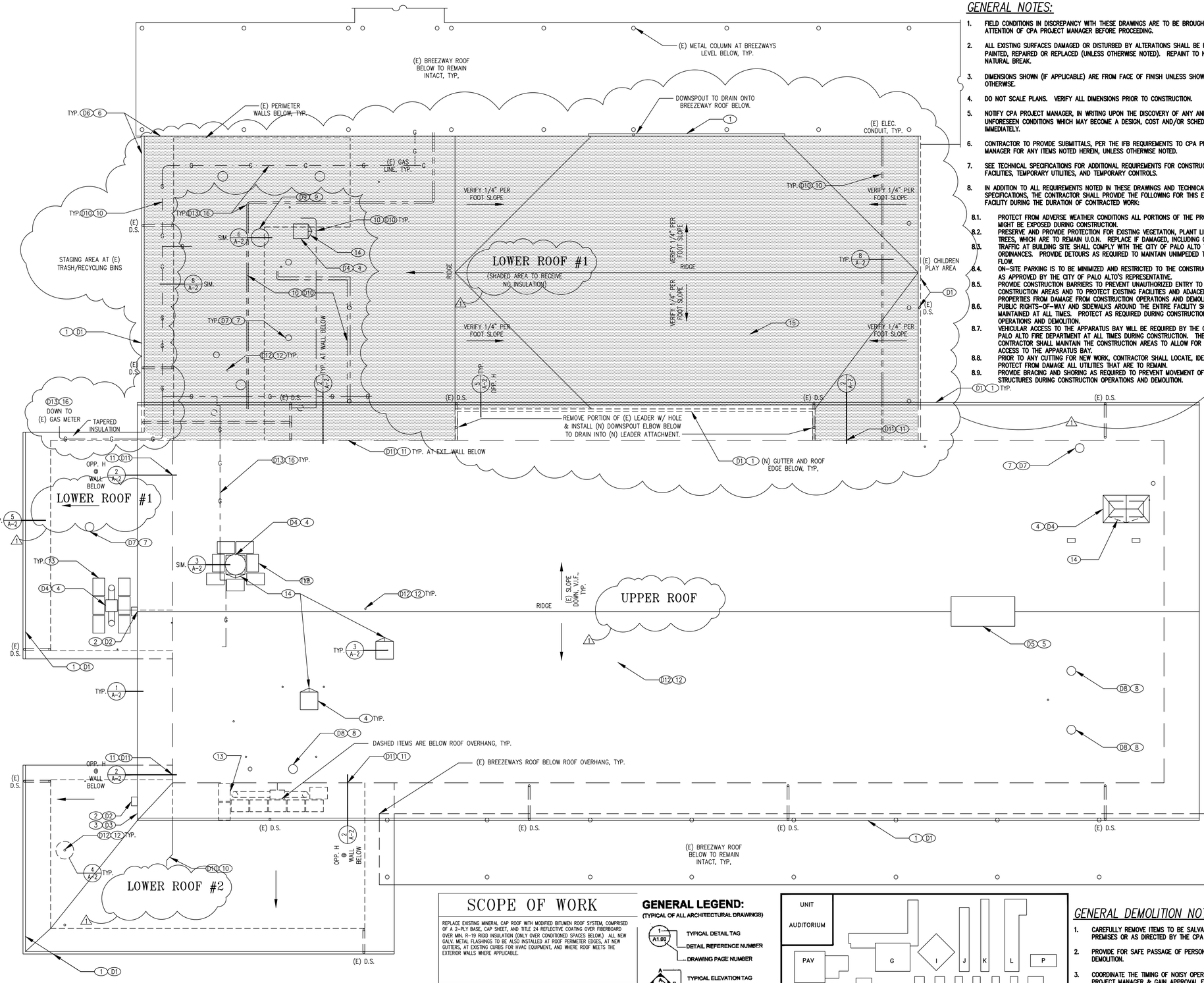
2. Two coats exterior paint, 1250 acrylic latex

C. Steel - Galvanized

1. One coat primer, 122 latex

2. Two coats exterior paint, 1250 acrylic latex oxford brown.

END SECTION



AUDITORIUM ROOF PLAN

1/8" = 1'-0" (1)

GENERAL NOTES:

1. FIELD CONDITIONS IN DISCREPANCY WITH THESE DRAWINGS ARE TO BE BROUGHT TO THE ATTENTION OF CPA PROJECT MANAGER BEFORE PROCEEDING.
2. ALL EXISTING SURFACES DAMAGED OR DISTURBED BY ALTERATIONS SHALL BE PATCHED, PAINTED, REPAIRED OR REPLACED (UNLESS OTHERWISE NOTED). REPAINT TO NEAREST NATURAL BREAK.
3. DIMENSIONS SHOWN (IF APPLICABLE) ARE FROM FACE OF FINISH UNLESS SHOWN OTHERWISE.
4. DO NOT SCALE PLANS. VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
5. NOTIFY CPA PROJECT MANAGER, IN WRITING UPON THE DISCOVERY OF ANY AND ALL UNFORESEEN CONDITIONS WHICH MAY BECOME A DESIGN, COST AND/OR SCHEDULE ISSUE IMMEDIATELY.
6. CONTRACTOR TO PROVIDE SUBMITTALS, PER THE IFB REQUIREMENTS TO CPA PROJECT MANAGER FOR ANY ITEMS NOTED HEREIN, UNLESS OTHERWISE NOTED.
7. SEE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR CONSTRUCTION FACILITIES, TEMPORARY UTILITIES, AND TEMPORARY CONTROLS.
8. IN ADDITION TO ALL REQUIREMENTS NOTED IN THESE DRAWINGS AND TECHNICAL SPECIFICATIONS, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR THIS ENTIRE FACILITY DURING THE DURATION OF CONTRACTED WORK:
   - 8.1. PROTECT FROM ADVERSE WEATHER CONDITIONS ALL PORTIONS OF THE PROJECT THAT MIGHT BE EXPOSED DURING CONSTRUCTION.
   - 8.2. PRESERVE AND PROVIDE PROTECTION FOR EXISTING VEGETATION, PLANT LIFE, AND TREES, WHICH ARE TO REMAIN U.O.N. REPLACE IF DAMAGED, INCLUDING GRASS.
   - 8.3. TRAFFIC AT BUILDING SITE SHALL COMPLY WITH THE CITY OF PALO ALTO TRAFFIC ORDINANCES. PROVIDE DETOURS AS REQUIRED TO MAINTAIN UNIMPEDED TRAFFIC FLOW.
   - 8.4. ON-SITE PARKING IS TO BE MINIMIZED AND RESTRICTED TO THE CONSTRUCTION LIMITS AS APPROVED BY THE CITY OF PALO ALTO'S REPRESENTATIVE.
   - 8.5. PROVIDE CONSTRUCTION BARRIERS TO PREVENT UNAUTHORIZED ENTRY TO CONSTRUCTION AREAS AND TO PROTECT EXISTING FACILITIES AND ADJACENT PROPERTIES FROM DAMAGE FROM CONSTRUCTION OPERATIONS AND DEMOLITION.
   - 8.6. PUBLIC RIGHTS-OF-WAY AND SIDEWALKS AROUND THE ENTIRE FACILITY SHALL BE MAINTAINED AT ALL TIMES. PROTECT AS REQUIRED DURING CONSTRUCTION OPERATIONS AND DEMOLITION.
   - 8.7. VEHICULAR ACCESS TO THE APPARATUS BAY WILL BE REQUIRED BY THE CITY OF PALO ALTO FIRE DEPARTMENT AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREAS TO ALLOW FOR VEHICULAR ACCESS TO THE APPARATUS BAY.
   - 8.8. PRIOR TO ANY CUTTING FOR NEW WORK, CONTRACTOR SHALL LOCATE, IDENTIFY, AND PROTECT FROM DAMAGE ALL UTILITIES THAT ARE TO REMAIN.
   - 8.9. PROVIDE BRACING AND SHORING AS REQUIRED TO PREVENT MOVEMENT OF STRUCTURES DURING CONSTRUCTION OPERATIONS AND DEMOLITION.

KEYED ROOF DEMOLITION NOTES:

- D1 REMOVE ALL METAL GUTTERS & DOWNSPOUTS; LEADERS TO REMAIN INTACT-KEEP ATTACHED TO EXTERIOR WALLS DURING CONSTRUCTION. REMOVE GUTTER & LEADER AT CHILDREN'S PLAY AREA; CAP LEADER.
- D2 TEMPORARILY REMOVE EXISTING SECURITY LIGHT FIXTURE WHERE NOTED; SAVE FOR RE-INSTALLATION.
- D3 LEAD ABATEMENT & REMOVAL OF DAMAGED PORTIONS OF (E) WOOD FASCIA BOARDS TO NEAREST BREAKLINE, TO BE DONE BY OTHERS PRIOR TO START OF CONSTRUCTION.
- D4 REMOVE ALL (E) WOOD SUPPORTS BELOW HVAC UNIT WHERE NOTED. PREP EXISTING OPENING TO RECEIVE NEW HIGHER CURB INSTALLATION WHERE REQUIRED.
- D5 TEMPORARILY REMOVE (E) COVERPLATE ASSEMBLY WHERE NOTED; SAVE FOR REUSE/RE-INSTALLATION. REMOVE ALL EXISTING WOOD SUPPORTS & PREP EXISTING OPENING TO RECEIVE NEW HIGHER CURB INSTALLATION.
- D6 AT ALL ROOFS, REMOVE (E) METAL ROOF EDGE FLASHING AND UNDERLYING ROOF PLIES BELOW, DOWN TO SUBSTRATE.
- D7 REMOVE BASE OF ROUND, EXHAUST/GRAVITY VENT; REMOVE SKIRT BASE AS NECESSARY.
- D8 REMOVE RUSTED METAL EXHAUST/GRAVITY VENT.
- D9 REMOVE WORN METAL EXHAUST FLUE ASSEMBLY, AND ANY RELATED HARDWARE AS REQUIRED.
- D10 REMOVE ALL WOOD SLEEPERS BELOW ALL GAS PIPING AND ELECTRICAL CONDUITS. DO NOT RE-USE ANY (E) PIPE STRAPS OR (E) SLEEPERS.
- D11 REMOVE ALL (E) WALL BASE FLASHING.
- D12 PRIOR TO REMOVING ENTIRE EXISTING ROOF SYSTEM DOWN TO EXISTING SUBSTRATE, TEMPORARILY COVER ALL PIPE JACKS. CLEAN & PREP ALL PIPE JACKS PRIOR TO NEW ROOF SYSTEM INSTALLATION.
- D13 REMOVE PORTIONS OF (E) GAS PIPING AND ELEC CONDUITS AS NECESSARY TO PREP FOR NEW ROOF SYSTEM THICKNESS.

KEYED ROOF PLAN NOTES:

1. ALL (E) ROOF DOWNSPOUTS ARE TO BE CAREFULLY INSPECTED FOR MOISTURE DAMAGE AND DRAINS THOROUGHLY CLEANED PRIOR TO NEW GUTTERS INSTALLATION, TYP. U.O.N. REPLACE ALL DOWNSPOUTS & ATTACH ONTO NEW GUTTERS; PRIME/PAINT GUTTERS & DOWNSPOUTS TO MATCH EXISTING CONDITIONS. SCHEDULE 40 LEADERS TO REMAIN INTACT, UNLESS OTHERWISE NOTED.
2. RE-INSTALL (E) SECURITY LIGHT FIXTURE, AFTER RE-ROOFING COMPLETED.
3. INSTALL NEW FASCIA BOARD; PRIME/PAINT TO MATCH EXISTING CONDITIONS.
4. ALL (E) HVAC UNITS ARE TO BE RE-INSTALLED ONTO HIGHER WOOD CURB ASSEMBLIES, TYP., U.O.N. INSTALL ROOF MATERIAL & GALV. COUNTER-FLASHING SIM. PER TYP. DETAIL 3/A-2.
5. RE-INSTALL (E) COVERPLATE ASSEMBLY ONTO HIGHER WOOD CURB. INSTALL ROOF MATERIAL & GALV. COUNTER-FLASHING SIM. PER TYP. DETAIL 3/A-2.
6. INSTALL ALL (N) GALV. METAL EDGE FLASHING AT ALL ROOF EDGES PER DETAIL 1/A-2,
7. PREP BASES OF ALL ROUND, EXHAUST PIPES FOR RE-ROOF INSTALLATION. PRIME AND PAINT AFTER ROOF INSTALLATION.
8. INSTALL NEW ROUND, EXHAUST/GRAVITY VENT (TO MATCH (E) CONDITIONS) AFTER RE-ROOF INSTALLATION.
9. INSTALL NEW ROUND, METAL EXHAUST FLUE ASSEMBLY (TO MATCH (E) CONDITIONS) AFTER RE-ROOF INSTALLATION.
10. INSTALL DURABLOKS OR APPROVED EQUAL, MAX. 10' O.C. (CLOSER DEPENDING ON PIPE WEIGHT) UNDER ALL (E) GAS PIPES TO BE REPLACED WITH NEW SLEEPERS WITH (N) GALV. PIPE STRAPS: ALL OTHER PIPING (ELEC CONDUIT, ETC.) TO RECEIVE DURABLOKS OR APPROVED EQUAL.
11. INSTALL ALL NEW WALL BASE FLASHING, TYP. PER DETAIL 2/A-2, WHERE ROOF MEETS EXTERIOR WALLS.
12. PRIOR TO RE-ROOF INSTALLATION, PATCH (E) SUBSTRATE WHERE DAMAGE HAS OCCURRED. INSTALLING ALL NEW GALV. METAL FLASHING AND NEW ROOFING SYSTEM: 2-PLY MODIFIED BITUMEN OVER FIBERBOARD OVER COVERBOARD OVER MIN. R-19 TAPERED INSULATION. SECURELY INSTALL GALV. WIRE MESH SCREEN COVER OVER TOP OF ALL PIPE JACKS. PRIME AND PAINT JACKS AFTER ROOF INSTALLATION.
13. INSTALL WALKWAY TRAFFIC PADS IN LAYOUT CONFIGURATION AS SHOWN (AT EAVE AND AT ROOF BELOW), TYP – DASHED LINES TO INDICATE BELOW OVERHANGS. MAINTAIN MFGR-RECOMMENDED DISTANCES BETWEEN PADS.
14. INSTALL ALL (N) CRICKETS AT HVAC UNITS – DASHED LINES TO INDICATE BELOW ROOF OR EQUIPMENT OVERHANGS.
15. SHADED PORTION OF ROOF SHOWN TO DENOTE AREA WITHOUT REQUIRED ROOF INSULATION. INSTALL TAPERED INSULATION THROUGHOUT ALL ROOF AREAS.
16. INSTALL NEW PIPE EXTENSIONS/ADJUST PORTIONS OF (E) GAS PIPING AND ELEC CONDUITS AS NECESSARY FOR THICKER ROOF SYSTEM.

SCOPE OF WORK

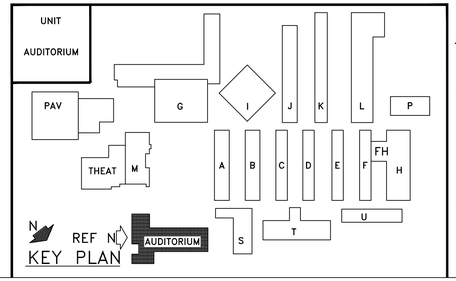
REPLACE EXISTING MINERAL CAP ROOF WITH MODIFIED BITUMEN ROOF SYSTEM, COMPRISED OF A 2-PLY BASE, CAP SHEET, AND TITLE 24 REFLECTIVE COATING OVER FIBERBOARD OVER MIN. R-19 RIGID INSULATION (ONLY OVER CONDITIONED SPACES BELOW.) ALL NEW GALV. METAL FLASHINGS TO BE ALSO INSTALLED AT ROOF PERIMETER EDGES, AT NEW GUTTERS, AT EXISTING CURBS FOR HVAC EQUIPMENT, AND WHERE ROOF MEETS THE EXTERIOR WALLS WHERE APPLICABLE.

DRAWING INDEX

GENERAL LEGEND:

(TYPICAL OF ALL ARCHITECTURAL DRAWINGS)

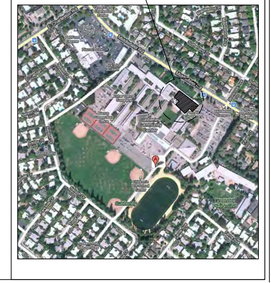
- 1 / A1.00 — TYPICAL DETAIL TAG; DETAIL REFERENCE NUMBER; DRAWING PAGE NUMBER
- A / A1.0 B / C — TYPICAL ELEVATION TAG; ELEVATION VIEW; ELEVATION REFRENCE NUMBER; DRAWING PAGE NUMBER
- D 1 / A1.00 — TYPICAL SECTION TAG; SECTION REFERENCE NUMBER; DRAWING PAGE NUMBER



GENERAL DEMOLITION NOTES:

1. CAREFULLY REMOVE ITEMS TO BE SALVAGED & STORE ON THE PREMISES OR AS DIRECTED BY THE CPA PROJECT MANAGER.
2. PROVIDE FOR SAFE PASSAGE OF PERSONS AROUND THE AREA OF DEMOLITION.
3. COORDINATE THE TIMING OF NOISY OPERATIONS W/ THE CPA PROJECT MANAGER & GAIN APPROVAL FOR SUCH OPERATIONS.
4. RESTORE DAMAGED IMPROVEMENTS TO THE ORIGINAL CONDITION TO THE SATISFACTION OF THE CPA PROJECT MANAGER, AT NO EXTRA COST.
5. REMOVE MATERIALS, RUBBISH & DEBRIS FROM THE SITE PROMPTLY. NO ACCUMULATION ON THE SITE WILL BE PERMITTED.

VICINITY MAP



CITY OF PALO ALTO

Public Works Department
Public Services Division
Facilities Management

3201 East Bayshore Road, Building B
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FAX (650) 496-5938

Approval:

No.	Issue or Revisions	Date
	BID SET	10/27/16
1	ADDENDUM NO. 1	12/1/16

AUDITORIUM ROOF IMPROVEMENTS

COMMUNITY SERVICES DEPARTMENT

CUBBERLEY COMMUNITY CENTER
4000 MIDDLEFIELD ROAD
PALO ALTO, CALIFORNIA, 94301-4700

Project Title:

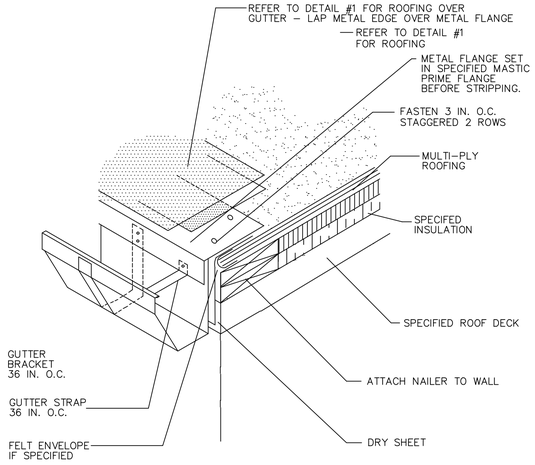
Created:	Drawn by:	Checked by:
4/22/15	CRL	CRL / JC

Drawing Title: AUDITORIUM ROOF PLAN PROJECT DATA

Scale:	Project No:
AS NOTED	CB-16002

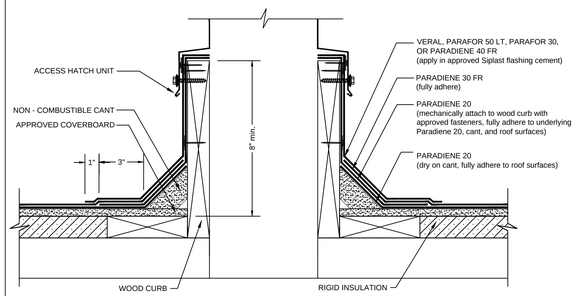
Drawing No: A-1

I:\PWD\FAC-MSC\REHAB & CIP\Rehab&CIPProjects - ACTIVE\Cubberley\Cubb Roofs\Cubb Bldg M_Re-Roof\Cubb-M-Roof_RoofPlan (A-1)

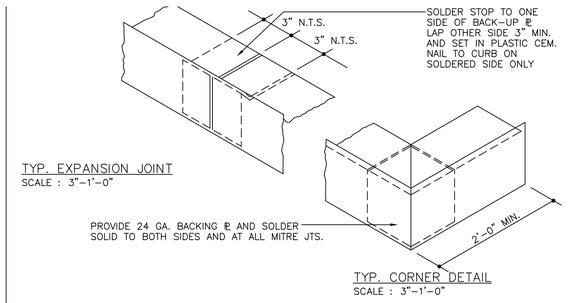


SLOPE GUTTER TO DOWNSPOUTS
1/4 IN./FT. MINIMUM

5 — NEW GUTTER
SCALE : N.T.S.

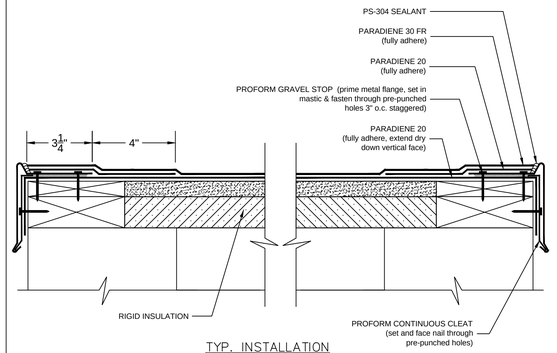


3 — WOOD CURB
SCALE : NTS



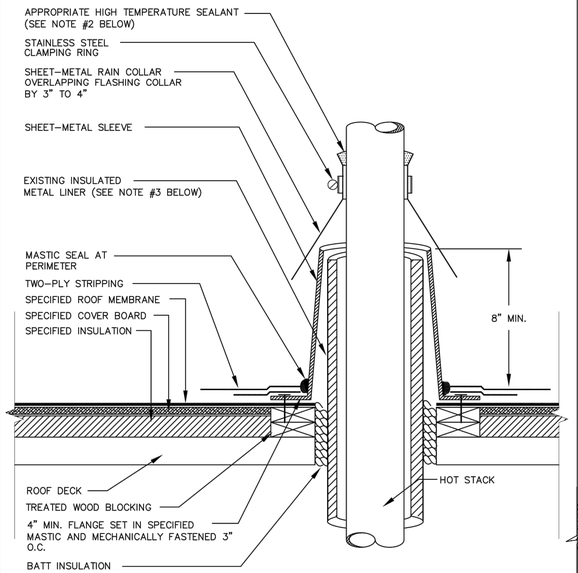
TYP. EXPANSION JOINT
SCALE : 3"–1'–0"

TYP. CORNER DETAIL
SCALE : 3"–1'–0"



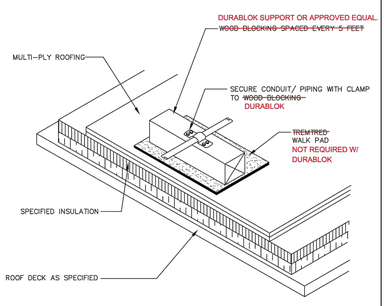
TYP. INSTALLATION

1 — TYPICAL GRAVEL STOP
SCALE : N.T.S.



NOTES:
1. PRIME ALL METAL SURFACES THAT WILL COME INTO CONTACT WITH THE SPECIFIED ADHESIVE.
2. WHEN HOT STACK SERVICE TEMPERATURE EXCEEDS 400 DEGREES, WELD OR SOLDER RAIN COLLAR TO PIPE IN LIEU OF INSTALLING SEALANT.
3. THE CLEARANCE REQUIRED BETWEEN THE HOT PIPE AND INSULATED METAL LINER WILL DEPEND ON THE TEMPERATURE OF THE MATERIAL HANDLED BY THE STACK.

6 — HOT STACK PENETRATION
SCALE : NTS



8 — CONDUIT OR PIPING SUPPORT
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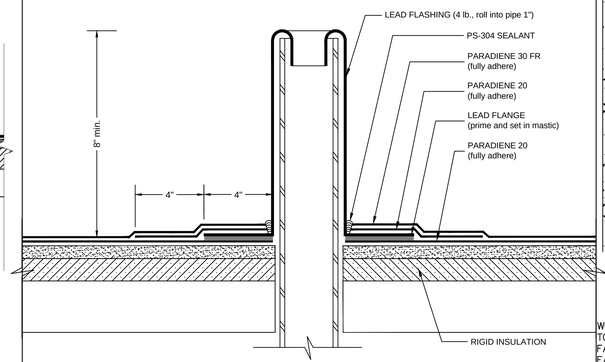

4 — PLUMBING VENT FLASHING
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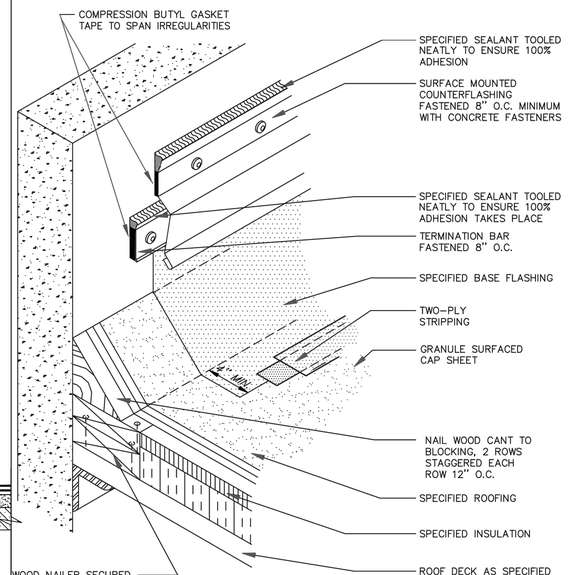

2 — ROOF FLASHING DETAILS
SCALE : 3"–1'–0"

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Approval:

No.	Issue or Revisions	Date
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AUDITORIUM ROOF IMPROVEMENTS

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PALO ALTO, CALIFORNIA, 94301-4700

Project Title:

Created:	Drawn by:	Checked by:
4/22/15	CRL	CRL / JC

Drawing Title: ROOF DETAILS

Scale:	Project No:
AS NOTED	CB–16002

Drawing No: A–2

\\Cc-terra\shared\PWD\FAC-MSC\REHAB & CIP\Rehab&CIPProjects - ACTIVE\FIRE STATIONS\FS 2\FS-2_Re-Roof\CAD\FS-2_ReRoof_Details-A3.dwg

DESC: **CUBBERLEY AUDITORIUM RE-ROOF**
BID SUMMARY

IFB No.: **166667**

JOB No. PF-14000
SHEET No.: 1 of 1
PREPARED BY: Cecil R. Lectura, Engr Tech III DATE: 12/14/16
CHECKED BY: Jimmy Y. Chen, Project Mgr DATE: 12/14/16

BASE BID ITEM	DESCRIPTION	BID QTY	UNIT	Alcal BID	Waterproofing Assoc BID	MP Roofing BID	Southwest BID	Pioneer BID	Andy's Roofing BID	Stronger BID
A1	1) Remove existing base assemblies of all roof-mounted HVAC equipment. All equipment to be re-installed onto new higher roof curbs. Install crickets/drainage swales to direct rainwater away from units. 2) Remove and replace all existing galvanized edge metal perimeter flashing throughout all roofs. 3) Remove all existing galvanized metal gutters and replace with same-sized, galvanized metal gutter in same location. 4) Remove existing corroded exhaust vents and replace with galvanized metal vents of same size, type, etc. at same locations. Reconnect all existing downspouts at same locations. Seal/prime/paint exterior sides/faces of all gutters to match existing conditions. 5) Remove portions of existing gas pipes and electrical conduits as necessary to vertically extend lines for new, thicker roof system with additional insulation. Install galvanized pipes and conduits. 6) Remove and replace all conduit-topped and gas piping-topped wood sleepers and metal clamps with new rubber Durablok sleepers or approved equal with galv. metal clamps, at all roofs in scope of work. 7) Strip peeling paint at noted fascia boards or remove and replace dry rot-damaged eave and fascia boards. In all cases with wood, prime and paint to match existing conditions. 8) Remove and replace with new all existing counter-flashing on perimeter walls adjacent to roof areas. Caulk top of wall joints of counter-flashing. 9) Remove existing mineral cap roofing system down to the plywood, for three (3) roof levels. 10) Install modified bituminous membrane roofing system over fiberboard over min. R-19 tapered rigid insulation or City-approved equal, throughout roof and around pipe and exhaust ductwork penetrations. Apply acrylic Title-24, CRRC-approved white or light-colored reflective coating over all roofing material areas as final step, after all other roof work completed.	1	LS	$319,578	$348,000	$370,000	$375,382	$384,000	$454,300	$525,500
A2	1) Apply rust inhibitor to the inside of all new gutters to prevent future oxidation. 2) Install new galvanized wire mesh screen covers securely over pipe jacks, to prevent both vandalism and pest encroachment. 3) Install plastic gutter screens at tree drip-line areas where applicable. 4) Install standard-size walkway traffic pads over new roof system. 5) Verify and clear all roof drainage pipes servicing as downspouts.	1	LS	$6,993	$1,980		$12,100	$7,000	$19,100	$15,000
A3	1) If dry-rot or otherwise damaged underlayment and/or sheathing is discovered, then remove and replace damaged area. 2) Repair and/or replace dry rot-damaged wood soffit boards and/or framing, as needed with approval from City Project Manager.	1	LS	**$5,000**	**$5,000**	**$5,000**	**$5,000**	**$5,000**	**$5,000**	**$5,000**
Base Bid	Total			**$331,571**	$354,980	$375,000	$392,482	$396,000	$478,400	$545,500