

Project Manual

for

HIDDEN VALLEY ELEMENTARY SCHOOL – RE-ROOFING PACKAGE

Santa Rosa City School

February 15, 2017

PBK Project No.: 1725-05R

Bid Documents



*Architecture
Engineering
Planning
Facility Consulting*

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Project Manual

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HIDDEN VALLEY ELEMENTARY SCHOOL – RE-ROOFING PACKAGE

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Bid Documents

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Jim Moorhouse

Superintendent of Schools

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Director Maintenance and Operations



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FORM AA
NOTICE INVITING BIDS

Sealed Bids for the work identified below in accordance with Bid Documents and addenda as may be issued prior to date of proposal opening will be received by the Board of Trustees, Santa Rosa City Schools, until Bid closing date and time, as identified below.

OWNER: Santa Rosa City Schools
211 Ridgeway Avenue
Santa Rosa, California 95401

PROJECT: Hidden Valley Elementary School Re-Roofing Package
Santa Rosa City Schools
PBK Number: 1725R-05

**MANDATORY
PRE-BID MEETING
& WALK THROUGH** Wednesday, March 1, 2017 at 11:15 AM.
Hidden Valley Elementary School
3435 Bonita Vista Drive
Santa Rosa, California 95404
Representatives of the Architect, Owner will be present at this meeting.

**PROPOSAL DATE
AND TIME:** Thursday, March 16, 2017
4:00 PM

**LOCATION OF
PROPOSAL
OPENING:** Santa Rosa City School
Board Room
211 Ridgeway Avenue
Santa Rosa, California 95401

ARCHITECT: PBK Architects, Inc.
2860 Gateway Oaks Drive
Suite 370
Sacramento, California 95833

Each bid shall include all elements of the RFB, required documentation, and must conform and be fully responsive to this invitation, the plans and specifications and all other Contract Documents. Copies of the RFB and required documentation are available for examination at the Santa Rosa City Schools Purchasing Department, County of Sonoma, California, and on the District's website:

<http://www.srcs.k12.ca.us/District/purchasing/Pages/Bids.aspx>

Prime Contractor bidders shall be required to have a valid **Class "B or C-39"** Contractor's License. Bids must be from an appropriately licensed contractor and must be sealed. Interested bidders must be appropriately licensed.

Each Bid must be accompanied by one of the following forms of bidder's security: (1) cash; (2) a cashier's check made payable to the District; (3) a certified check made payable to the District; or (4) a bidder's bond executed by a California admitted surety as defined in Code of Civil Procedure section 995.120, made payable to the District in the form set forth in the Bid Documents. Such bidder's security must be in an amount not less than ten percent (10%) of the maximum amount of bid for each site, as a guarantee that the bidder will enter into the proposed Contract, if the same is awarded to such bidder, and will provide the required performance and payment Bonds, insurance certificates and any other required documents. In the event of failure to enter into said Contract or provide the necessary documents, said security will be forfeited.

All bids must be in the hands of the Owner no later than the time specified above. Please seal all bids in duplicate in an envelope with the following information on the face of the envelope.

Name of Offeror (Roofing Contractor)
Albert F. Biella Elementary School - Re-Roofing Package
Santa Rosa City Schools
Attn: Jim Moorhouse, Director Maintenance and Operations

Bidders are hereby notified that pursuant to section 1770 et seq. of the Labor Code of the State of California, the Director of Industrial Relations has ascertained the general prevailing rate of per diem wages and the rates for overtime and holiday work in the locality in which the work is to be performed for each craft, classification or type of workman needed to execute the contract which will be awarded to the successful bidder. Copies are on file with and available upon request from the District. While District endeavors to provide current and accurate information regarding the general prevailing rate of per diem wages, the District relies solely on information available to it from the Director of Industrial Relations and therefore, notwithstanding the availability of copies through the District of the prevailing rate of per diem wages, each bidder should verify the accuracy of the information contained in the Director of Industrial Relations reports through the Office of the Director of Industrial Relations. Said prevailing rate schedules are also available at the DIR website www.dir.ca.gov/dlsr/statistics_research.html.

At the request and expense of the successful bidder, securities equivalent to the amount withheld from progress payments (i.e., retention) may be deposited with the District, or with a state or federally chartered bank as the escrow agent (the successful bidder shall bear all costs of escrow) and the District shall pay monies which would otherwise be retained to the successful bidder. The form of escrow agreement and securities eligible for investment pursuant to this option shall be governed by Public Contracts Code Section 22300 and Government Code Section 16430.

Bidders shall be required to complete, and file with District, a Statement of Experience, which if required by District, shall be submitted on the form provided by District and may include information regarding the bidder's previous experience on similar projects, experience on public works projects, history of performance and references. If a Statement of Responsibility is required by District, failure to complete any item identified on the Statement of Responsibility shall render the bidder's subsequent Proposal non-responsive and may result in the rejection of bidder's Proposal. Bids shall be made upon the form provided by the Architect and shall be properly completed with all items filled out; numbers shall be in writing and figures; the signatures of all persons signing shall be in longhand. No bidder may withdraw his/her Proposal, including Bids for Additive/Deductive Alternates, for a period of sixty (60) days after the time set for the opening of Bids, and the Board will act to accept or reject Bids within that period of time.

Within 10 days after notification of the Award of Contract, the successful bidder or bidders will be required to furnish, simultaneously with execution of the Contract, a Labor and Material Payment Bond and a Faithful Performance Bond in the form required by the District, each in an amount equal to one hundred percent (100%) of the contract amount from an admitted surety company. The surety shall be listed as an admitted surety insurer by the California Department of Insurance. Verification of status shall be pursuant to Code of Civil Procedure section 995.311 by 1) printing out information from the website of the Department of Insurance (<http://www.insurance.ca.gov/docs/FSInsurer.htm>) confirming the surety is an admitted surety insurer and attaching a printed copy to the bond, or 2) obtaining a certificate from the Sacramento county clerk that confirms the surety is an admitted insurer and attaching it to the bond.

In accordance with Education Code Section 17076.11, District has established a participation goal for Disabled Veteran Business Enterprises (DVBE). Bidder shall be familiar with this provision and provide the necessary information as indicated in the Instructions to Bidders.

In determining the lowest responsive Proposal, District intends to consider only the base Proposal.

The Contract Documents for the Project have many unique requirements. Bidders are cautioned to carefully review all of the Contract Documents prior to submitting a Proposal and to obtain pre-bid

clarification of any provision which bidder believes is ambiguous or confusing, as provided for in the Contract Documents.

The Board reserves the right to reject any or all Bids, and further reserves the right to waive any informalities or irregularities in the Bids. Pursuant to Labor Code sections 1725.5 and 1771.1, all contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a contract to perform public work must be registered with the Department of Industrial Relations. No bid will be accepted nor any contract entered into without proof of the contractor's and subcontractors' current registration with the Department of Industrial Relations to perform work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain. Active registration with the Department of Industrial Relations or the duration of the Project

This Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. In bidding on this project, it shall be the Bidder's sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this contract and applicable law in its bid.

END OF DOCUMENT

FORM AB
INSTRUCTIONS TO BIDDERS

Each bid submitted to the Santa Rosa City Schools ("District") for the Hidden Valley Elementary School Re-Roofing Package ("Project") shall be in accordance with the following instructions and requirements, which are part of the Contract Documents for this Project.

1. Deadline For Receipt of Bids. Each bid shall be sealed and submitted to the District Superintendent or designee no later than 4:00 p.m. on Thursday March 16, 2017. The District suggests that bids be hand delivered in order to ensure their timely receipt. Any bids received after the time stated, regardless of the reason, shall be returned, unopened, to the bidder.
2. Bidders' Conference. A mandatory bidders' conference will be held on Wednesday, March 1, 2017 at 11:15 a.m., for the purpose of acquainting all prospective bidders with the Contract Documents and the Project site. It is imperative that all prospective bidders attend this conference. The failure to attend the conference may result in the disqualification of the bid of the non-attending bidder.
3. Requests for Information. A bidder's failure to request clarification or interpretation of an apparent error, inconsistency or ambiguity in the Contract Documents waives that bidder's right to thereafter claim entitlement to additional compensation based upon an ambiguity, inconsistency, or error, which should have been discovered by a reasonably prudent Contractor, subject to the limitations of Public Contract Code §1104. Any questions relative to the bid shall be in writing and directed to the District Superintendent or designee at the address specified for receipt of bid proposals. These requests shall be submitted to the District at least five working days prior to the date the bid is due.
4. Bid Proposal Forms. All bid proposals shall be made on the form provided by the District. All items on the form shall be filled out in ink. Numbers should be stated in figures, and the signatures of all individuals must be in long hand. The completed form should be without interlineations, alterations, or erasures
5. Execution of Forms. Each bid shall give the full business address of the bidder and must be signed by the bidder or bidder's authorized representative with his or her usual signature. Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters. Bids by corporations must be signed with the legal name of the corporation, followed by the signature and designation of the president, secretary, or other person authorized to bind the corporation in this matter. The name of each person signing shall also be typed or printed below the signature. When requested by the District, satisfactory evidence of the authority of the officer signing on behalf of the corporation or partnership shall be furnished. A bidder's failure to properly sign required forms may result in rejection of the bid. All bids must include the bidder's contractor license number(s) and expiration date(s).
6. Bid Security. Bid proposals shall be accompanied by a certified or cashier's check or bid bond for an amount not less than ten percent (10%) of the bid amount, payable to the District. A bid bond shall be secured from an admitted surety company, licensed in the State of California, and satisfactory to the District. The bid security shall be given as a guarantee that the bidder will enter into the Contract if awarded the work, and in the case of refusal or failure to enter into the Contract within ten (10) calendar days after notification of the award of the Contract or failure to provide the payment and performance bonds and proof of insurance as required by the Contract Documents, the District shall have the right to award the Contract to another bidder and declare the bid security forfeited. The District reserves the right to pursue all other remedies in law or equity relating to such a breach including, but not limited to, seeking recovery of damages for breach of

- contract. Failure to provide bid security, or bid security in the proper amount, shall result in rejection of the bid.
7. Withdrawal of Bid Proposals. Bid proposals may be withdrawn by the bidders prior to the time fixed for the opening of bids, but may not be withdrawn for a period of sixty (60) days after the opening of bids, except as permitted pursuant to Public Contract Code §5103.
 8. Addenda or Bulletins. The District reserves the right to issue addenda or bulletins prior to the opening of the bids subject to the limitations of Public Contract Code §4104.5. Any addenda or bulletins issued prior to bid time shall be considered a part of the Contract Documents.
 9. Bonds. The successful bidder shall be required to submit payment and performance bonds as specified in and using the bond forms included with the Contract Documents. All required bonds shall be based on the maximum total contract price as awarded, including additive alternates, if applicable.
 10. Rejection of Bids and Award of Contract. The District reserves the right to waive any irregularities in the bid and reserves the right to reject any and all bids. The Contract will be awarded, if at all, within sixty (60) calendar days after the opening of bids to the lowest responsible and responsive bidder, subject to Governing Board approval. The time for awarding the Contract may be extended by the District with the consent of the lowest responsible, responsive bidder.
 11. Execution of Contract. The successful bidder shall, within ten (10) calendar days of the Notice of Award of the Contract, sign and deliver to the District the executed contract along with the bonds and certificates of insurance required by the Contract Documents. In the event the successful bidder fails or refuses to execute the Contract or fails to provide the bonds and certificates as required, the District may declare the bidder's bid deposit or bond forfeited as liquidated damages, and may award the work to the next lowest responsible, responsive bidder, or may reject all bids and, in its sole discretion, call for new bids. In all cases, the District reserves the right, without any liability, to cancel the award of Contract at any time prior to the full execution of the Contract.
 12. Drawings and Specifications. All drawings, specifications and other documents used or prepared during the project shall be the exclusive property of the District.
 13. Evidence of Responsibility. Upon the request of the District, a bidder shall submit promptly to the District satisfactory evidence showing the bidder's financial resources, the bidder's experience in the type of work being required by the District, the bidder's availability to perform the Contract and any other required evidence of the bidder's qualifications and responsibility to perform the Contract. The District may consider such evidence before making its decision to award the Contract. Failure to submit requested evidence may result in rejection of the bid.
 14. Taxes. Applicable taxes shall be included in the bid prices.
 15. Bid Exceptions. Bid exceptions are not allowed. If the Bidder has a comment regarding the bid documents or the scope of work, the Bidder shall submit those comments to the District for evaluation at least five working days prior to the opening of the bids. No oral or telephonic modification of any bid submitted will be considered and a sealed written modification may be considered only if received prior to the opening of bids. E-mailed or faxed bids or modifications will not be accepted.
 16. Discounts. Any discounts which the bidder desires to provide the District must be stated clearly on the bid form itself so that the District can calculate the net cost of the bid proposal. Offers of discounts or additional services not delineated on the bid form will not be considered by the District in the determination of the lowest responsible responsive bidder.

17. Quantities. The quantities shown on the plans and specifications are approximate. The District reserves the right to increase or decrease quantities as desired.
18. Prices. Bidders must quote prices F.O.B. unless otherwise noted. Prices should be stated in the units specified and bidders should quote each item separately.
19. Samples. On request, samples of the products being bid shall be furnished to the District.
20. Special Brand Names/Substitutions. In describing any item, the use of a manufacturer or special brand does not restrict bidding to that manufacturer or special brand, but is intended only to indicate quality and type of item desired, except as provided in §3400 of the Public Contract Code. Substitute products will be considered either prior to or after the award of the Contract in accordance with §3400 and as set forth in either the Supplemental Conditions or the Specifications. All data substantiating the proposed substitute as an "equal" item shall be submitted with the written request for substitution. The District reserves the right to make all final decisions on product and vendor selection.
21. Container Costs and Delivery. All costs for containers shall be borne by the bidder. All products shall conform to the provisions set forth in the federal, county, state and city laws for their production, handling, processing and labeling. Packages shall be so constructed to ensure safe transportation to the point of delivery.
22. Bid Negotiations. A bid response to any specific item of the bid using terms such as "negotiable," "will negotiate," or similar phrases, will be considered non-responsive.
23. Prevailing Law. In the event of any conflict or ambiguity between these instructions and state or federal law or regulations, the latter shall prevail. All equipment to be supplied or services to be performed under the bid proposal shall conform to all applicable requirements of local, state and federal law, including, but not limited to, Labor Code §§1771, 1778 and 1779.
24. Allowances. An "allowance" means an amount included in the bid proposal for work that may or may not be included in the Project, depending on conditions that will become known only after the Project is underway.
25. Subcontractors. Pursuant to the Subletting and Subcontracting Fair Practices Act, Public Contract Code §§4100-4114, every bidder shall, on the enclosed Subcontractor List Form, set forth:
 - a. The name and location of the place of business of each Subcontractor who will perform work or labor or render service to the bidder in or about the work or fabricate and install work in an amount in excess of one-half (1/2) of the one percent (1%) of the bidder's total bid.
 - b. If the bidder fails to specify a Subcontractor for any portion of the work to be performed under the Contract in excess of one-half (1/2) of one percent (1%) of the bidder's total bid, bidder agrees that bidder is fully qualified to and shall perform that portion of the work. The successful bidder shall not, without the written consent of the District or compliance with Public Contract Code §§4100 - 4114, either:
 - 1) Substitute any person as Subcontractor in place of the Subcontractor designated in the original bid;
 - 2) Permit any subcontract to be voluntarily assigned or transferred or allow the work to be performed by anyone other than the original Subcontractor listed in the bid; or

- 3) Sublet or subcontract any portion of the work in excess of one-half (1/2) of one percent (1%) of the total bid as to which the bidder's original bid did not designate a Subcontractor.
26. Examination of Contract Documents and Work Site. Before submitting a bid proposal, all bidders shall carefully examine the Contract Documents, including the plans and specifications, shall visit the site of the proposed work, and shall fully inform themselves of all conditions in and about the work site, as well as applicable federal, state and local laws and regulations that may affect the work. No bidder shall visit the site without prior authorization of the District. Bidders shall contact the District Superintendent or designee for coordination of site visits.
27. Form and Approval of Contract. The Contract Documents must be approved by the Governing Board of the District and its legal counsel. The bidder selected by the District shall execute the contract provided by the District.
28. Licenses and Permits. Each bidder shall at all times possess all appropriate and required licenses or other permits to perform the work as identified in the Contract Documents. Upon request, each bidder shall furnish the District with evidence demonstrating possession of the required licenses or permits.
29. Denial of Right to Bid. Contractors or Subcontractors who have violated state law governing public works shall be denied the right to bid on this public works contract pursuant to Labor Code §1777.7.
30. Bidders Interested in More Than One Bid. No person, firm, or corporation shall make, or file, or be interested in more than one bid. However, a person, firm, or corporation that has submitted a sub proposal to a bidder, or that has quoted prices of materials to a bidder, is not thereby disqualified from submitting a sub-proposal or quoting prices to other bidders or from submitting a prime proposal.
31. Contractor's State License Board. Contractors and Subcontractors are required by law to be licensed and regulated by the California Contractors' License Board.
32. Fingerprinting. By law it is the District's responsibility to determine whether a contractor must provide fingerprint certification. Pursuant to Education Code §45125.2, the District considers the totality of the circumstances in order to determine if fingerprinting of employees of a contractor working on a school site is required. Factors to be considered include the length of time the contractor's employees are on school grounds, whether students are in proximity to the location where the contractor's employees are working, and whether the contractor's employees are working alone or with others.
33. Disabled Veterans Participation Goals. In accordance with Education Code §17076.11, this District has a participation goal for disabled veteran business enterprises ("DVBE") of at least 3 percent per year of the overall dollar amount of funds allocated to the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the District. Prior to, and as a condition precedent for final payment under the Contract for the project, the Contractor shall provide appropriate documentation to the District identifying the amount paid to DBVE in conjunction with the contract, so that the District can assess its success at meeting this goal. The Office of Small Business and DVBE Certification (OSDC), (916) 375-4940, www.pd.dgs.ca.gov/smbus/default.htm, is an information resource to assist bidders in locating Disabled Veteran Business Enterprises. (Please note: while the OSDC may be used as a resource, the DVBE Program administered by OSDC applies to state contracts, not local agency (school district) contracts.)
34. Labor Compliance Program. The project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In accordance with SB 854, all bidders,

contractors and subcontractors working at the site shall be duly registered with the Department of Industrial Relations at time of bid opening and at all relevant times. Proof of registration shall be provided as to all such contractors prior to the commencement of any work.

35. Additive and Deductive Items: Method of Determining Lowest Bid. Pursuant to Public Contract Code §20103.8, if the bid solicitation includes additive and/or deductive items, the checked [X] method shall be used to determine the lowest bid: *[check one]*

_____ (a) The lowest bid shall be the lowest bid price on the base contract without consideration of the prices on the additive or deductive items.

_____ (b) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items that were specifically identified in the bid solicitation or Bid Proposal Form as being used for the purpose of determining the lowest bid price.

_____ (c) The lowest bid shall be the lowest total of the bid prices on the base contract and those additive or deductive items taken in order from a specifically identified list of those items that, when in the solicitation, and added to, or subtracted from, the base contract, are less than, or equal to, a funding amount publicly disclosed by the District before the first bid is opened.

_____ (d) The lowest bid shall be determined in a manner that prevents any information that would identify any of the bidders or the proposed Subcontractors or suppliers from being revealed to the public entity before the ranking of all bidders from lowest to highest has been determined.

If no method is checked, sub-paragraph (a) shall be used to determine the lowest bid.

Notwithstanding the method used by the District to determine the lowest responsible bidder, the District retains the right to add to or deduct from the Contract any of the items included in the bid solicitation.

36. Bid Protest. Any bid protest must be in writing and received by the District Office before 5:00 p.m. no later than three (3) working days following bid opening and shall comply with the following requirements:

- a. The bid protest must contain a complete statement of the basis for the protest and all supporting documentation.
- b. The party filing the protest must have actually submitted a bid for the Project. A Subcontractor of a bidder submitting a bid for the Project may not submit a bid protest. A bidder may not rely on the bid protest submitted by another bidder, but must timely pursue its own protest.
- c. The protest must refer to the specific portion or portions of the Contract Documents upon which the protest is based.
- d. The protest must include the name, address and telephone number of the person representing the protesting bidder.
- e. The bidder filing the protest must concurrently transmit a copy of the bid protest and all supporting documentation to all other bidders with a direct financial interest which may be affected by the outcome of the protest, including all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
- f. The bidder whose bid has been protested may submit a written response to the bid protest. Such response shall be submitted to the District before 5 p.m. no later than two (2) working days after the deadline for submission of the bid protest or receipt of the bid protest, whichever is sooner, and shall include all supporting documentation. Such

response shall also be transmitted concurrently to the protesting bidder and to all other bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

- g. The procedure and time limits set forth in this section are mandatory and are the bidder's sole and exclusive remedy in the event of bid protest. The bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the bid protest, including filing a Government Code claim or legal proceedings.
- h. If the District determines that a protest is frivolous, the protesting bidder may be determined to be non-responsible and that bidder may be determined to be ineligible for future contract awards by the District.
- i. *A "working day" for purposes of this section means a weekday during which the District's office is open and conducting business, regardless of whether or not school is in session.*

END OF DOCUMENT

FORM AC

**BID PROPOSAL FORM
HIDDEN VALLEY ELEMENTARY SCHOOL RE-ROOFING PACKAGE
SANTA ROSA CITY SCHOOLS**

Submitted by: _____

Date: _____ Phone No.: _____

To: Santa Rosa City Schools
Board of Trustees
211 Ridgeway Avenue
Santa Rosa, California 95401

Having examined Proposal and Contract Documents prepared by PBK, Inc., dated February 15, 2017 and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above-named project for the sum indicated below.

In submitting his Proposal, the undersigned agrees to the following:

1. Hold proposal open for acceptance 60 days.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.

By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. BASE PROPOSALS

Undersigned agrees to complete the Work for the lump sum amount of:

- A. Base Proposal:
Hidden Valley Elementary School Re-Roofing Package

_____ Dollars \$ _____
(Amount written in words governs) (Amount in figures)

II. ALLOWANCES

Undersigned certifies that the specified allowances specified below and in Section 01 21 00 are included in the Base Proposal and agrees that unexpended balance of allowance sums will revert to Owner in the final settlement of the contract:

- A. Hidden Valley ES Owners Roofing Contingency Allowance: \$ 90,000.00
B. Hidden Valley ES Unit Price Allowance: \$ 45,000.00

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 4:00PM ON MARCH 16, 2017.

III. UNIT PRICE

Unit Price No. 1. Replacement of plywood roof decking material:

Dollars \$ _____/SQ/FT
(Amount in figures)

Unit Price No. 2. Replacement of Tongue and Groove wood roof decking material:

Dollars \$ _____/SQ/FT
(Amount in figures)

Unit Price No. 3. Removal and replacement of treated wood nailers:

Unit Price No. 3a (2 x 4) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 3b (2 x 6) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 3c (2 x 8) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 3d (2 x 10) Dollars \$ _____/LF
(Amount in figures)

IV. BID BOND

The undersigned has checked carefully all the above figures and understands that the District is not responsible for any errors or omissions on the part of the undersigned in making this bid.

Enclosed find certified or cashier's check no. _____ of the _____ Bank for _____ Dollars (\$_____) or Bidder's Bond of the _____ surety company in an amount of not less than ten percent (10%) of the entire bid. The undersigned further agrees, on the acceptance of this proposal, to execute the Contract and provide the required bonds and insurance and that in case of default in executing these documents within the time fixed by the Contract Documents, the proceeds of the check or bond accompanying this bid shall be forfeited and shall become the property of the District.

V. CONTRACT TIME

Completion Time: The Owner has a critical need for the work on the above School to commence on June 5, 2017 and be substantially completed by August 11, 2017. Refer to Section CB, Supplementary Conditions related to liquidated damages for failure to Substantially Complete by dates listed above.

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 4:00PM ON MARCH 16, 2017.

VI. ADDENDA:

Receipt of the following addenda is hereby acknowledged:

Addendum # _____	Dated: _____	Addendum # _____	Dated: _____
Addendum # _____	Dated: _____	Addendum # _____	Dated: _____
Addendum # _____	Dated: _____	Addendum # _____	Dated: _____

VII. CHANGES IN THE WORK

Undersigned understands that changes in the work shall be performed in accordance with the Supplementary Conditions.

VIII. LIQUIDATED DAMAGES

Undersigned understands that liquidated damages as defined in the Supplementary Conditions will be included in the form of Agreement between Owner and Contractor and that the contractor will be bound thereto.

Contractor: _____ State License No: _____

By: _____ State License Classification: _____

Title: _____ Expiration Date: _____

Mailing Address: _____

Email Address: _____

DIR # _____

Telephone No.: _____

Required Attachments:

Subcontractor List Form
Non-Collusion Declaration
Bid Bond (or Cashier's or Certified Check)
Bidders' Questionnaire

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 4:00PM ON MARCH 16, 2017.

Each bidder shall list below the name and location of place of business for each Subcontractor who will perform a portion of the Contract work in an amount in excess of 1/2 of 1 percent of the total contract price. The nature of the work to be subcontracted shall also be described.

[illegible]

FORM AE
WORKERS' COMPENSATION CERTIFICATE

Labor Code §3700 in relevant part provides:

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

- (a) By being insured against liability to pay compensation in one or more insurers duly authorized to write compensation insurance in this State.
- (b) By securing from the Director of Industrial Relations a certificate of consent to self-insure, which may be given upon furnishing proof satisfactory to the Director of Industrial Relations of ability to self-insure and to pay any compensation that may become due to his employees."

I am aware of the provisions of §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 of this Contract and will require all Subcontractors to do the same.

Contractor

By: _____

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

FORM AF
NONCOLLUSION DECLARATION

To be executed by the bidder and submitted with the bid.

_____, declares that he or she is
_____ of _____, the party making the foregoing bid,
and affirms that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership,
company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that
the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid,
and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else
to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner,
directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price
of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of
any other bidder, or to secure any advantage against the public body awarding the contract of anyone
interested in the proposed contract; that all statements contained in the bid are true and correct; and,
further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown
thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay,
any fee to any corporation, partnership, company association, organization, bid depository, or to any
member or agent thereof to effectuate a collusive or sham bid.

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

Date: _____ Signature _____

**FORM AG
BID BOND**

We, the Contractor, _____ as principal ("Principal"), and _____, as surety ("Surety"), are firmly bound unto the _____ District ("District") in the penal sum of ten percent (10%) of the total amount of the bid of the Principal submitted to the District for the work described below for the payment of which sum in lawful money of the United States, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by this agreement.

Whereas, the Principal has submitted the accompanying bid ("Bid") dated _____, for the following project ("Project"):

_____.

Now, therefore, if the Principal does not withdraw its Bid within the period specified, and if the Principal is awarded the Contract and within the period specified fails to enter into a written contract with District, in accordance with the Bid as accepted, or fails to provide the proof of required insurance, the performance bond and/or the payment bond by an admitted surety within the time required, or in the event of unauthorized withdrawal of the Bid, if the Principal pays the District the difference between the amount specified in the Bid and the amount for which District may otherwise procure the required work and/or supplies, if the latter amount is in excess of the former, together with all related costs incurred by District, then the above obligation shall be void and of no effect. Otherwise, the Principal and Surety shall pay to the District the penal sum described above as liquidated damages.

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

In witness whereof the above-bound parties have executed this instrument under their several seals this _____ day of _____, 20__, the name and corporate seal of each corporate Party being hereunder affixed and these presents duly signed by its undersigned representative, pursuant to the authority of its governing body.

(Corporate Seal)

Principal/Contractor

By _____

Title: _____

(Corporate Seal)

Surety

Attach Attorney-In-Fact Certificate

PBK
Project No. 1725-05

Hidden Valley Elementary School Re-Roofing Package
Santa Rosa City Schools

By _____

Title

To be signed by Principal and Surety and Acknowledgment and Notary Seal to be attached.

FORM AH
BIDDER'S QUESTIONNAIRE

for

Hidden Valley Elementary School Re-Roofing Package

TO THE BIDDER:

In making its award, the Governing Board will take into consideration the Bidder's experience, financial responsibility and capability. The following questionnaire is a part of the bid. Any bid received without this completed questionnaire may be rejected as nonresponsive. The Board will use, but will not be limited to, the information provided herein for evaluating the qualifications and responsibility of the bidder and the bidder's organization to carry out satisfactorily the terms of the Contract Document. The questionnaire must be filled out accurately and completely and submitted with the bid. Any errors, omissions or misrepresentation of information may be considered as a basis for the rejection of the bid and may be grounds for the termination of any contract executed as a result of the bid.

A. Description of Bidder's Organization

1. Firm Name _____
2. Address _____
3. Telephone Number _____
4. Type of Organization

- a. Corporation? Yes ____ No ____

If yes, list the officers and positions, and the State in which incorporated.

If the Bidder corporation is a subsidiary, give name and address of parent corporation.

- b. Partnership? Yes ____ No ____

If yes, list partner names and addresses

General Partners:

Limited Partners:

BIDDER'S QUESTIONNAIRE

c. Individual Proprietorship? Yes ____ No ____

If yes, list name and address of proprietor:

B. Nature of Operations

1. How long have you been engaged in the contracting business under your present business name? _____

2. How many years of experience does your business have in construction work similar to that called for under this bid? _____

3. Have you now contracts, or have you ever contracted, to provide construction for any school district, community college district or county office of education in the State of California? Yes ____ No ____

a. If "yes," on a separate attached sheet, provide the following information for all construction projects you have had with school districts, community college districts and county offices of education during the last four (4) years:

1. Year contract awarded
2. Type of work
3. Contract completion time called for/actual completion time
4. Contract price
5. For whom performed, including person to call for a reference and telephone number
6. Location of work
7. Number of stop notices filed
8. For each contract, list any lawsuits filed relating to that contract in which you were a defendant or plaintiff
9. Amount of liquidated damages assessed.

b. On a separate attached sheet, provide the following information for all construction contracts of a similar nature as called for in this bid that you have had with entities other than school districts, community college districts and county offices of education during the last four (4) years:

1. Year contract awarded
2. Type of work
3. Contract completion time called for/actual completion time
4. Contract price
5. For whom performed, including person to call for reference and phone number
6. Location of work

BIDDER'S QUESTIONNAIRE

7. Number of stop notices filed
8. For each contract list any lawsuits filed relating to that contract in which you were a defendant or plaintiff
9. Amount of liquidated damages assessed.

- c. For each construction contract that you have failed to complete within the contract time in the last four years please state the reasons for the untimely performance.

C. Financial and Credit Data

1. If your bid is considered for award, and if requested by the District, will you supply the following data? Yes ____ No ____
 - a. Names and addresses of any banks where you regularly do business.
 - b. The names and addresses of any banks, finance companies, dealers, suppliers, or others where you have notes or loans.
 - c. Give credit references, including at least three trade or industry suppliers with whom you regularly deal.
2. Will you submit on request a balance sheet for the past three (3) years? Yes ____ No ____
3. Where have you engaged in the construction business, or any other type of business, in the last five years?

<u>Name of Business</u>	<u>Location</u>	<u>Type of Business</u>	<u>Years in Business</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

If any of the business endeavors referred to above are no longer operating, or you are no longer associated with them, please give brief details:

4. The following surety companies may be contacted as references as to the financial responsibility and general reliability of the bidder:

<u>Surety Name</u>	<u>Contact Person</u>	<u>Phone Number</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

I certify under penalty of perjury that the foregoing is true and correct. Executed at _____, California, on _____, 20____.

PBK
Project No. 1725-05

Hidden Valley Elementary School Re-Roofing Package
Santa Rosa City Schools

Signature of Bidder

Name (*print*)

FORM BA
NOTICE OF AWARD

To:

Project Description:

The District has considered the bid submitted by you for the above described work in response to its Notice Inviting Bids for the Project.

You are hereby notified that your bid has been accepted in the amount of: _____
_____ (\$ _____).

You are required to execute the Contract and furnish the required Performance Bond and Payment Bond using the bond forms provided in the Contract Documents and the required certificates of insurance within ten (10) calendar days from the date of issuance of this Notice.

If you fail to execute the Contract and to furnish the bonds and insurance within ten (10) calendar days from the date of issuance of this Notice, the District will be entitled to consider all your rights arising out of its acceptance of your bid as abandoned and your Bid Bond forfeited. The District will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this Notice of Award to the District.

Dated this _____ day of _____, 20__.

By _____
Authorized District Signature

Receipt of this above Notice of Award is hereby acknowledged by:

_____, this is the _____

day of _____, 200__.

By _____

Title _____

FORM BB
PERFORMANCE BOND

WHEREAS, the Governing Board of the _____ District ("District"), at its meeting on _____, 20____, has awarded to _____ ("Principal"), the Contract for performance of the following project ("Project"):

WHEREAS, the Principal is required under the terms of the Contract to furnish a bond to the District as obligee ensuring its full and faithful performance of the Contract Documents, which are fully incorporated herein by this reference,

NOW, THEREFORE, we, the Principal and _____, as Surety, hereby guarantee the Principal's full, faithful and complete performance of the Contract Document requirements in the penal sum of _____ dollars (\$_____) for the payment of which sum will and truly be made, we bind ourselves, our heirs, executors, administrators and successors, jointly, severally, and firmly by this agreement to perform or have performed all of the work and activities required to complete the Project pursuant to the Contract Documents and to pay to the District all damages the District incurs as a result of the Principal's failure to fully perform in accordance with the Contract Documents.

The condition of the obligation is such that if the Principal, its heirs, executors, administrators, successors or assigns shall in all things abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any amendment thereof made as therein provided, on its or their parts to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall insure and indemnify and save harmless the District, its officers and agents, as therein stipulated, then this obligation shall become null and void. Otherwise, it shall be and remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the Contract Documents shall in any way affect its obligations on this bond and it does hereby waive notice of any such change, extension of time, alteration or addition.

Principal and Surety further agree to pay all costs incurred by the District in connection with enforcement of this bond, including, but not limited to the District's reasonable attorney's fees and costs incurred, with or without suit, in addition to any other sum required by this bond. Surety further agrees that death, dissolution, or bankruptcy of the Principal shall not relieve the Surety of its obligations hereunder.

In witness whereof, five (5) identical counterparts of this instrument, each of which shall for all purposes be deemed an original thereof, have been duly executed by the Principal and Surety on the _____ day of _____, 20____.

*To be signed by
Principal and Surety
and acknowledgment
and notarial seal to
be attached.*

PRINCIPAL

By: _____

TITLE _____

SURETY

By: _____

TITLE _____

The above bond is accepted and approved this _____ day of _____, 20____.

By: _____
Authorized District Signature

**FORM BC
PAYMENT BOND**

WHEREAS, _____ the
_____ District ("District") and the Contractor, _____ ("Principal") have entered into a
contract ("Contract") for the furnishing of all materials, labor, services, equipment, tools, supervision and
transportation necessary, convenient and proper for the _____ project ("Project") which Contract
dated _____, 2____, and all of the Contract Documents made part thereof are fully incorporated herein
by this reference; and

WHEREAS, Contractor/Principal is required by Division 4, Part 6, Title 3, Chapter 5 (commencing at
Section 9550) of the California Civil Code to furnish a bond in connection with the contract;

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

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Contractor/Principal, his/her or its heirs,
executors, administrators, successors, or assigns, or a subcontractor, shall fail to pay any person or
persons named in Civil Code Section 9100 or fail to pay for any materials or other supplies used in, upon,
for, or about the performance of the work contracted to be done, or for any work or labor thereon of any
kind, or for amounts due under the Unemployment Insurance Code with respect to work or labor thereon
of any kind, or shall fail to deduct, withhold, and pay over to the Employment Development Department
any amounts required to be deducted, withheld, and paid over by Section 13020 of the Unemployment
Insurance Code with respect to work and labor thereon of any kind, then said Surety will pay for the same,
in or to an amount not exceeding the amount set forth above, and in case suit is brought upon this bond
Surety will also pay such reasonable attorney's fees as shall be fixed by the court, awarded and taxed as
provided in Division 4, Part 6, Title 3, Chapter 5 (commencing at Section 9550) of the California Civil
Code.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the California Civil
Code so as to give a right of action to such person or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety of this bond shall not be exonerated or released from the
obligation of the bond by any change, extension of time for performance, addition, alteration, or
modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any
scheme or work of improvement described above or pertaining or relating to the furnishing of labor,
materials, or equipment therefor, nor by any change or modification of any terms of payment or extension
of the time for any payment pertaining or relating to any scheme or work of improvement described above,
nor by any rescission or attempted rescission of the contract, agreement, or bond, nor by any conditions
precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise
entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by
any person other than the claimant seeking to recover on the bond, and that this bond be construed most
strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no
circumstances shall Surety be released from liability to those for whose benefit such bond has been given,
by reason of any breach of contract between the Owner and original contractor or on the part of any
obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person
described in Section 8400 and 8402 of the California Civil Code and has not been paid the full amount of
his/her or its claim and that Surety does hereby waive notice of any such change, extension of time,
addition, alteration, or modification.

In witness whereof, this instrument has been duly executed by the Principal and Surety this _____ day of _____, 20__.

*To be signed by
Principal and Surety
and acknowledgment
and notarial seal to
be attached.*

PRINCIPAL

By: _____

Title

SURETY

By: _____

Title

The above bond is accepted and approved this _____ day of _____, 20__.

By: _____
Authorized District Signature

FORM CA
GENERAL CONDITIONS

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1. DEFINITIONS

Addendum: A written change or revision to the Contract Documents issued to the prospective bidders prior to the time of receiving bids.

Alternate: The sum to be added to or deducted from the base Bid if the change in scope of work as described in Alternates is accepted by the District.

Approved: Approved by the District or the District's authorized representative unless otherwise indicated in the Contract Documents.

Architect: The person or firm holding a valid license to practice architecture or engineering which has been designated (if any designated) to provide architectural or engineering design services on this Project. When Architect is referred to within the Contract Documents and no architect or engineer has in fact been designated, then the matter shall be referred to the District Superintendent or designee.

As Directed: As directed by the District or its Architect, unless otherwise indicated in the Contract Documents.

As Selected: As selected by the District or its Architect, unless otherwise indicated in the Contract Documents.

Bid: The properly completed and signed proposal to perform the construction work for the Project as described in the Contract Documents.

Construction Manager: The individual or entity named as such by the District. If no Construction Manager is designated for the Project, all references to the Construction Manager in these Contract Documents shall mean the District and/or its designee.

Contract: The legally binding agreement between the District and the Contractor wherein the Contractor agrees to furnish the labor, materials, equipment, and appurtenances required to perform the work described in the Contract Documents and the District agrees to pay the Contractor for such work.

Contract Documents: The Contract Documents are described in the Contract for this Project.

Contractor: The person or entity holding a valid license in the State of California required for performing this Project and who has contracted with the District to perform the construction work described in the Contract Documents. The term Contractor shall be construed to mean all of the officers, employees, Subcontractors, suppliers, or other persons engaged by the Contractor for the work of this Project.

District and/or Owner: The District, its Governing Board, authorized officers and employees, and authorized representatives.

DSA: The State of California Division of the State Architect which has the authority to review, approve and inspect the design, alteration and construction of school buildings.

Final Completion: Final Completion is achieved when the Contractor has fully completed all Contract Document requirements, including, but not limited to, all final punch list items, to the District's satisfaction.

Inspector: The person engaged by the District to conduct the inspections required by the Education Code and Title 24.

GENERAL CONDITIONS

Furnish: Purchase and deliver to the site of installation.

Governing Board: The Governing Board of the District.

Indicated or As Shown: Shown on drawings and/or as specified.

Install: Fix in place, for materials; and fix in place and connect, for equipment.

Modification: An authorized change to the Contract Documents which may or may not include a change in contract price and/or time.

Project: The total construction work and activities described in these Contract Documents.

Secure: Obtain.

Subcontractor: A person, firm, or corporation, duly licensed by the State of California, who has a contract with the Contractor to furnish labor, materials and equipment, and/or to install materials and equipment for work in this Contract.

2. ARCHITECT

The Architect is responsible for the overall design of the Project. The working drawings, technical Specifications, sketches and other information necessary to define the work covered by these Contract Documents have been prepared by the Architect. The Architect shall visit, inspect and observe the construction to determine general compliance with the Contract Documents, and interpret the drawings and Specifications consistent with their intent. The Architect shall evaluate the samples and other submittals required in the technical Specifications, and maintain an up-to-date log of all such items processed. The Architect will consult with the District, Contractor, and any state, county or city agency having jurisdiction over the work whenever necessary to further the best interests of the Project.

3. CONTRACT DOCUMENTS

a. Contents and Precedence

The Contract Documents consist of the executed Contract and all Addenda, all approved change orders, the completed Bid Form, the required Bonds and the Insurance forms, the Notice Inviting Bids, the Instructions to Bidders, the Notice of Award, the Notice to Proceed, the General Conditions, any supplemental Conditions, the Technical Specifications, the Drawings and the completed Bidder's Questionnaire. The Contract Documents are complementary and anything required by one shall be as binding as if required by all. In case of conflicts within the Contract Documents, the order of precedence of interpretation shall be as listed above, with the executed Contract and any change order thereto having priority, and subsequent Addenda having priority over prior Addenda only to the extent modified by the subsequent Addenda. In case of conflict within the drawings, larger scale drawings shall govern smaller scale drawings, and written dimensions shall govern over scaled dimensions.

b. Ambiguities, Errors, and Inconsistencies

If, in the opinion of the Contractor, the construction details indicated on the drawings or otherwise specified are in conflict with accepted industry standards for quality construction and therefore might interfere with its full guarantee of the work involved, the Contractor shall promptly bring this information to the attention of the Architect for appropriate action

before submittal of the bid. Contractor's failure to request clarification or interpretation of an apparent ambiguity, error or inconsistency waives that Contractor's right to thereafter claim any entitlement to additional compensation based upon an ambiguity, inconsistency, or error, which should have been discovered by a reasonably prudent Contractor, subject to the limitations of Public Contract Code §1104. During the Project, should any discrepancy appear or any misunderstanding arise as to the import of anything contained in the Contract Documents, the matter shall be promptly referred to the Architect, who will issue instructions or corrections.

c. Lines and Planes

All lines and planes appearing on Contract drawings to be horizontal or vertical and not explicitly indicated otherwise shall be constructed true and plumb. All lines and planes appearing on Contract drawings to intersect at right angles and not explicitly indicated otherwise shall be constructed at true right angles. Where details are indicated covering specific conditions, such details also apply to all similar conditions not specifically indicated.

d. Standards

The specification standards of the various sections of the Specifications shall be the procedural, performance, and material standards of the applicable association publications identified and shall be the required level of installation, materials, workmanship, and performance for the applicable work. Except where a specific date of issue is mentioned hereinafter, references to specification standards shall mean the edition, including amendments and supplements, in effect on the date of the Notice Inviting Bids. Where no standard is identified and a manufacturer is specified, the manufacturer's specifications are the standards. All standards shall be subordinate to the requirements of the applicable codes and regulations.

e. Reference to the Singular

Wherever in the Specifications an article, device or piece of equipment is referred to in the singular number, such reference shall include as many such items as are shown on drawings or required to complete the installation.

4. INTENT OF DRAWINGS AND SPECIFICATIONS

- a. Drawings and Specifications are to be read as an integrated document. The Contractor shall promptly report to the Architect any ambiguities, discrepancies, or errors which come to the Contractor's attention.
- b. Figured dimensions shall be followed in preference to scaled dimensions, and the Contractor shall make all additional measurements necessary for the work and shall be responsible for their accuracy. Before ordering any material or doing any work, the Contractor shall verify all measurements at the Project site and shall be responsible for the correctness of same.
- c. It is the intent of the drawings and Specifications to show and describe complete installations. Items shown but not specified, or specified but not shown, shall be included unless specifically omitted.

- 1) The Specifications shall be deemed to include and require everything necessary and reasonably incidental to the completion of all work described and indicated on the drawings, whether particularly mentioned or shown, or not.

5. TRADE DIVISIONS

Segregation of the Specifications into the designated trade divisions is only for the purpose of facilitating descriptions and shall not be considered as limiting the work of any subcontract or trade. Subject to other necessary provisions set forth in the Specifications, the terms and conditions of such limitations or inclusions shall lie solely between the Contractor and its Subcontractors. "Scope" as indicated in each section of the Specifications shall serve only as a general guide to what is included in that section. Neither the stated description nor the division of the plans and Specifications to various sections, which is done solely for convenience, shall be deemed to limit the work required, divide or indicate it by labor jurisdiction or trade practice, or set up any bidding barriers to the various sub-contractors or suppliers.

- a. The Contractor shall be responsible for the proper execution of all work required by the Contract Documents and for allocating such portions as the Contractor sees fit to the various Subcontractors, subject to applicable law. The Contractor is cautioned that the various individual sections may not contain all work that the Contractor may wish to allocate to a particular Subcontractor or everything bearing on the work of a particular trade, some of which may appear in other portions of the plans or Specifications.
- b. If the Contractor elects to enter into any subcontract for any section of the work the Contractor assumes all responsibility for ascertaining that the Subcontractor for the work is competent, licensed, solvent, thoroughly acquainted with all conditions and legal requirements of the work, has included all materials and appurtenances in connection therewith in the subcontract, and has performed its work in strict compliance with the Contract Documents.
- c. It shall be the responsibility of the Contractor to notify each prospective Subcontractor at the time of request for bids of all portions of the Contract Documents, including the General Conditions, Supplementary Conditions and any parts of sections of Specifications or plans that the Contractor intends to include as part of the subcontract.

6. MASTER MANDATORY PROVISIONS

- a. Any material, item, or piece of equipment mentioned, listed or indicated without definition of quality, shall be consistent with the quality of adjacent or related materials, items, or pieces of equipment on the Project.
- b. Any method of installation, finish, or workmanship of an operation called for, without definition of standard of workmanship, shall be followed or performed and finished in accordance with best practices and consistent with adjacent or related installations on the Project.
- c. Any necessary material, item, piece of equipment or operation not called for but reasonably implied as necessary for proper completion of the work shall be furnished,

installed or performed and finished; and shall be consistent with adjacent or related materials, items, or pieces of equipment on the Project, and in accordance with best practices.

- d. Names or numbered products are to be used according to the manufacturers' directions or recommendations unless otherwise specified.

7. CONTRACTOR

- a. The Contractor shall perform all the work and activities required by the Contract Documents and furnish all labor, materials, equipment, tools and appurtenances necessary to perform the work and complete it to the District's satisfaction within the time specified. The Contractor shall at all times perform the work of this Contract in a competent and workmanlike manner and, if not specifically stated, accomplish the work according to the best standards of construction practice. The Contractor in no way is relieved of any responsibility by the activities of the architect, engineer, inspector or DSA in the performance of such duties.
- b. The Contractor shall employ a full-time competent superintendent and necessary assistants who shall have complete authority to act for the Contractor on all matters pertaining to the work. The superintendent shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable. Also, the superintendent shall not be changed without the written consent of the District unless the superintendent ceases to be employed by the Contractor.
- c. Contractor shall make the layout of lines and elevations and shall be responsible for the accuracy of both the Contractor's and the Subcontractors' work resulting therefrom. All dimensions affecting proper fabrication and installation of all Contract work must be verified by the Contractor prior to fabrication and installation by taking field measurements of the true conditions. The Contractor shall take, and assist Subcontractors in taking, all field dimensions required in performance of the work, and shall verify all dimensions and conditions on the site. If there are any discrepancies between dimensions in drawings and existing conditions which will affect the work, the Contractor shall promptly bring such discrepancies to the attention of the Architect for adjustment before proceeding with the work. Contractor shall be responsible for the proper fitting of all work and for the coordination of all trades, Subcontractors and persons engaged upon this Contract.
- d. Contractor shall do all cutting, fitting, or patching of Contractor's work that may be required to make its several parts come together properly and fit it to receive or be received by work of other contractors as shown, or reasonably implied by, the drawings and Specifications for the completed work. Any cost incurred by the District due to defective or ill-timed work shall be borne by the Contractor.

8. RESPONSIBILITY OF CONTRACTOR

- a. Contractor shall be held strictly responsible for the proper performance of all work covered by the Contract Documents, including all work performed by Subcontractors. All work performed under this Contract shall comply in every respect to the rules and regulations of all agencies having jurisdiction over the Project or any part thereof.
- b. Contractor shall submit Verified Reports as defined in §§4-336 and 4-343 (c), Group 1, Chapter 4, Part I, Title 24, California Code of Regulations ("CCR"). The duties of the Contractor are as defined in §4-343, Group 1, Chapter 4, Part I, Title 24, of the CCR.

Contractor shall keep and make available a copy of Title 24 of the CCR at the job site at all times.

- c. Where, because of short supply, any item of fabricated materials and/or equipment, indicated on drawings or specified is unobtainable and it becomes necessary, with the consent of the Architect, to substitute equivalent items differing in details or design, the Contractor shall promptly submit complete drawings and details indicating the necessary modifications of the work. This provision shall be governed by the terms of the General Conditions regarding Submittals: Shop Drawings, Cuts and Samples.
- d. With respect to work performed at and near a school site, Contractor shall at all times take all appropriate measures to ensure the security and safety of students and staff, including, but not limited to, ensuring that all of Contractor's employees, Subcontractors, and suppliers entering school property strictly adhere to all applicable District policies and procedures, e.g., sign-in requirements, visitor badges, and access limitations.

9. SUBCONTRACTORS

- a. Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the District. The District shall be deemed to be the third party beneficiary of the contract between the Contractor and each Subcontractor. If the Contractor does not specify a Subcontractor for any portion of the work to be performed under this Contract, as required by law, Contractor shall perform that portion of the work with its own forces. The Contractor shall not substitute any other person or firm as a Subcontractor for those listed in the bid submitted by the Contractor, without the written approval of the District and in conformance with the requirements of the Public Contract Code. The District reserves the right of approval of all Subcontractors proposed for use on this Project, and to this end, may require financial, performance, and such additional information as is needed to secure this approval. If a Subcontractor is not approved, the Contractor shall promptly submit another firm of the same trade for approval.
- b. The Contractor shall insert appropriate provisions in all subcontracts pertaining to work on this Project requiring the Subcontractors to be bound by all applicable terms of the Contract Documents. The Contractor shall be as fully responsible for the acts and omissions of the Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by the Contractor.

10. PERFORMANCE AND PAYMENT BONDS

- a. As directed in the Notice of Award, the Contractor shall file with the District the following bonds, using the bond forms provided with these Contract Documents:
 - 1) A corporate surety bond, in a sum not less than 100 percent of the amount of the Contract, to guarantee the faithful performance of the Contract.
 - 2) A corporate surety bond, in a sum not less than 100 percent of the amount of the Contract, to guarantee the payment of wages for services engaged and of bills contracted for materials, supplies, and equipment used in the performance of the Contract.
- b. Corporate sureties on these bonds and on bonds accompanying bids must be admitted sureties as defined by law, legally authorized to engage in the business of furnishing surety bonds in the State of California. All sureties and bond forms must be satisfactory to

the District. Failure to submit the required bonds within the time specified by the Notice of Award, using the forms provided by the District, may result in cancellation of the award of Contract and forfeiture of the Bid Bond.

- c. The amount of the Contract, as used to determine the amounts of the bonds, shall be the total amount fixed in the Contractor's proposal for the performance of the required work.
- d. During the period covered by the Contract, if any of the sureties upon the bonds shall become insolvent or unable, in the opinion of the District, to pay promptly the amount of such bonds to the extent to which surety might be liable, the Contractor, within thirty (30) days after notice given by the District to the Contractor, shall provide supplemental bonds or otherwise substitute another and sufficient surety approved by the District in place of the surety becoming insolvent or unable to pay. If the Contractor fails within such thirty (30) day period to substitute another and sufficient surety, the Contractor shall, if the District so elects, be deemed to be in default in the performance of its obligations hereunder and upon the bid bond, and the District, in addition to any and all other remedies, may terminate the Contract or bring any proper suit or other proceedings against the Contractor and the sureties or any of them, or may deduct from any monies then due or which thereafter may become due to the Contractor under the Contract, the amount for which the surety, insolvent or unable to pay, shall have been liable on the bonds, and the monies so deducted shall be held by the District as collateral security for the performance of the conditions of the bonds.

11. INSURANCE

- A. Contractor shall obtain insurance acceptable to District from a company or companies acceptable to District. All required insurance must be written by a company authorized to do business in the State of California at the time the policy is issued. Per the District's requirements all insurers shall have at least an A-V11 rating as listed in Best's Insurance Guides' latest edition. Provided, however, that notwithstanding the foregoing, Contractor and Subcontractors may be insured by the California State Fund for Workers' Compensation Insurance regardless of its rating. District may, in its sole discretion, consider other ratings which may be acceptable to District. Required documentation of such insurance shall be furnished to District at the time Contractor returns the executed Contract. Contractor shall not commence work at the site, nor shall it allow its employees or subcontractors or others to commence work at the site, until all insurance required hereunder has been submitted and approved and a Notice to Proceed has been issued.

Contractor shall maintain the following insurance:

- B. Workers' Compensation and Employers' Liability Insurance as required by any applicable law or regulation including waiver of subrogation by the insurance carrier with respect to District. Employers' Liability Insurance shall not be less than:
 - \$1,000,000 each accident for bodily injury by accident
 - \$1,000,000 policy limit for bodily injury by disease
 - \$1,000,000 each employee for bodily injury by disease
- C. General Liability Insurance: Contractor shall carry Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of Contractor providing insurance for bodily injury liability, personal injury liability and property damage liability including waiver of subrogation by the insurance carrier for the limits of liability indicated below and including coverage for:

- 1. Premises and Operations.

2. Products and Completed Operations.
3. **Contractual Liability insuring the obligations assumed by Contractor in the Contract.**
4. Broad Form Property Damage (including Completed Operations).
5. Explosion, Collapse and Underground Hazards.
6. Personal Injury Liability.

Where Contractor's policy excludes coverage for "Mold" see Pollution Liability requirements below.

D. Limits of Liability – All Policy Forms:

If Contractor carries Comprehensive General Liability Insurance, the limits of liability shall not be less than a Combined Single Limit for Bodily Injury, Property Damage and Personal Injury Liability of:

\$2,000,000 Each Occurrence
\$3,000,000 Aggregate

If Contractor carries Commercial General Liability insurance, the limits of liability shall not be less than:

\$2,000,000 each occurrence (combined single limit for bodily injury and property damage)

\$1,000,000 for Personal Injury and Advertising Liability
\$1,000,000 Aggregate for Products and Completed Operations
\$3,000,000 General Aggregate

The "general aggregate" limit shall apply separately to Contractor's work under this Contract.

- E. Special "Claims Made" and "Modified Occurrence" Policy Form Provisions: Contractor shall not provide General Liability Insurance under a "Claims Made" and "Modified Occurrence" Commercial General Liability form.
- F. Additional Insured: With respect to Contractor's General Liability policy:
 1. District and its officers, agents and employees and the Architect shall be named as additional insureds.
 2. The policy shall be endorsed to stipulate that the insurance afforded the additional insureds shall apply as primary insurance and that any other insurance maintained by District or Architect shall be excess only and shall not be called upon to contribute with this insurance.
 3. Coverage for District and its officers, agents and employees, and Architect as additional insureds shall be provided by a policy provision and an endorsement. The additional insured endorsement shall be an ISO CG 20 10 (04/13), or an ISO CG 20 38 (04/13), or their equivalent as determined by the District in its sole discretion.
- G. Automobile Liability Insurance: Contractor shall carry automobile liability insurance, including coverage for all owned, hired and non-owned automobiles. The limits of liability shall not be

less than \$1,000,000 combined single limit each accident for Bodily Injury and Property Damage combined. Insurance Services Office Business Auto Coverage Form Number CA 0001, Code 1 (any auto) is required. **If Contractor or their subcontractors or vendors will be hauling hazardous materials, the automobile liability policy shall include the MCS 90 endorsements and Bodily Injury / Property Damage Combined Single Limit shall not be less than \$3,000,000.**

- H. Aircraft Liability Insurance: If Contractor and/or its subcontractors use any owned, leased, chartered or hired aircraft of any type (including helicopters) in the performance of this Contract, it shall maintain aircraft liability insurance in an amount not less than \$5,000,000 per occurrence including passenger liability with a minimum limit for "on-hook" liability of \$250,000 or a limit sufficient to replace the item being hoisted, whichever is greater, or shall require its subcontractor performing such work to provide such coverage and shall have named as additional insureds, District. Acceptable evidence of coverage and additional insured status shall be provided prior to any work being performed.
- I. Crane Liability Insurance: If a Contractor and/or its Subcontractors will be utilizing a crane in the performance of this Contract, it shall maintain liability insurance in an amount not less than \$2,000,000 per occurrence with a minimum limit for "on-hook" liability of \$250,000 or a limit sufficient to replace the item being hoisted, whichever is greater, and shall have named as additional insured the District. Acceptable evidence of coverage and additional insured status shall be provided prior to any work being performed.
- J. Pollution Liability. If Contractors are required to perform remedial hazardous material operations such as asbestos-containing materials, contaminated soil, etc., they must, in addition to the above requirements, carry a "Contractor's Pollution Liability" policy with limits not less than \$5,000,000 per occurrence or claim naming District and Architect, and their respective officers, employees and agents as additional insureds including contractual liability coverage. Where Contractor is installing mechanical systems or exterior insulation and finish systems, Contractor shall provide Contractor's Pollution Liability which includes coverage for "mold" with limits of liability of not less than \$1,000,000 per occurrence naming District and Architect, and their respective officers, employees and agents as additional insureds including contractual liability coverage.
- K. The Contractor, during the progress of the Work and until final acceptance of the Work by District upon completion of the entire Contract, shall maintain Builder's Risk, Course of Construction or similar first party property coverage issued on a replacement cost value basis consistent with the total replacement cost of all insurable Work and the Project included within the Contract Documents. Coverage is to insure against all risks of accidental direct physical loss, and must include, by the basic grant of coverage or by endorsement, the perils of vandalism, malicious mischief (both without any limitation regarding vacancy or occupancy), fire, sprinkler leakage, civil authority, sonic boom, earthquake, flood, collapse, wind, lightning, smoke and riot. The coverage must include debris removal, demolition, increased costs due to enforcement of building ordinance and law in the repair and replacement of damage and undamaged portions of the property, and reasonable costs for the Architect's and engineering services and expenses required as a result of any insured loss upon the Work and Project which is the subject of the Contract Documents, including completed Work and Work in progress, to the full insurable value thereof. Such insurance shall include the District and the Architect as additional named insureds, and any other person with an insurable interest as designated by the District. The Contractor shall submit to the District for its approval all items deemed to be uninsurable. The risk of the damage to the Work due to the perils covered by the "Builder's Risk/All Risk" Insurance, as well as any other hazard which might result in damage to the Work, is that of the Contractor and the Surety, and no Claims for such loss or damage shall be recognized by the District nor will such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

- L. Certificate of Insurance: A Certificate of Insurance as evidence of the insurance required by this Contract shall be furnished by Contractor to District, before any work hereunder is commenced by Contractor. The Certificates of Insurance shall provide that there will be no cancellation or reduction of coverage without thirty (30) days' prior written notice to Contractor, and to District as additional insureds.

The Certificate of Insurance furnished as evidence of Comprehensive General Liability or Commercial General Liability insurance carried by Contractor shall include a copy of the policy provision or the additional insured endorsement adding District and Architect and their respective officers, employees and agents as additional insureds and shall provide that insurance for such additional insureds applies as primary insurance and that other insurance maintained by District and Architect shall not be called upon for contribution. The Contractor shall provide such evidence of insurance throughout any warranty period established in the Contract.

- M. All policies and certificates of insurance of the Contractor shall contain the following clauses:

(1) Insurers have no right of recovery or subrogation against the District (including its agents and agencies as aforesaid), it being the intention of the parties that the insurance policies so affected shall protect both parties and be the primary coverage for any and all losses covered by the above-described insurance.

(2) The clause "other insurance provisions" in a policy in which the District is named as an insured, shall not apply to the District.

(3) The insurance companies issuing the policy or policies shall have no recourse against the District (including its agents and agencies as aforesaid) for payment of any premiums or for assessments under any form of policy.

(4) Any and all deductibles in the above described insurance policies shall be assumed by and be the account of, the Contractor.

- N. In the event Contractor fails to maintain any insurance coverage required under this Contract, District may withhold payment to Contractor and may obtain such coverage and charge the expense to Contractor, or terminate this Contract, or hold Contractor accountable for all costs incurred by District as a result of Contractor's failure to maintain the proper insurance.

- O. The required insurance shall be subject to the approval of District but any acceptance of insurance certificates by District shall in no way limit or relieve Contractor of the duties and responsibilities delegated to it in this Contract. If higher limits or other forms of insurance are required in the Contract Documents, Contractor will comply with such requirements.

- P. If Contractor fails to comply with any of the provisions of this section, Contractor shall, at its own cost, defend, indemnify and hold harmless District and Architect (including their officers, agents, employees, affiliates, parents and subsidiaries) from and against any and all liability damages, losses, claims, demands, actions, causes of action, costs, including attorney's fees and expenses, or any of them resulting from the death or injury of any person or damage to any property or pollution liability pursuant to this Insurance Section to the extent that District and Architect would have been defended or indemnified had Contractor complied with all of the provisions of this Section.

- Q. Property Insurance Considerations: Contractor waives all rights against each other and against District for loss or damage to the extent covered by Builder's Risk or any other property or equipment insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance. If the policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued

coverage where there is a waiver of subrogation, the owner of such policies will cause them to be so endorsed or obtain such consent.

CONTRACTOR SHALL REQUIRE THAT ALL OF ITS SUBCONTRACTORS AND SUB-SUBCONTRACTORS MEET THE SAME INSURANCE REQUIREMENTS AS ARE SET FORTH IN THIS SECTION AND THAT DISTRICT AND ARCHITECT AND THEIR RESPECTIVE OFFICERS, EMPLOYEES AND AGENTS ARE NAMED AS ADDITIONAL INSURED, AS REQUIRED.

12. CODES AND REGULATIONS

- a. The Contractor shall be knowledgeable regarding and shall comply with applicable portions of California Code of Regulations Title 24, the applicable Building Code, and all other codes, ordinances, regulations or orders of properly constituted authority having jurisdiction over the work of this Project. The Contractor shall examine the Contract Documents for compliance with these codes and regulations and shall promptly notify the Architect of any discrepancies.
- b. All work and materials shall be in full accordance with the latest rules and regulations of the Safety Orders of the Division of Industrial Safety and the applicable State laws and/or regulations. Nothing in the Project plans or Specifications is to be construed to permit work not conforming to the applicable Codes. Buildings and/or all other construction covered by this Contract shall meet all the regulations for access by the physically handicapped as administered by the Division of the State Architect and as may be required by federal or state law.
- c. If the work under this Contract is for the construction of a school building as defined by the Education Code, then the following provisions shall apply to the Contract:
 - 1) All work shall be executed in accordance with the current requirements of the Education Code and California Code of Regulations: Title 24 and Title 19. No deviations from the DSA approved plans and Specifications will be permitted except upon a Change Order or Addenda, signed by the District and Architect and approved by the Division of the State Architect and the State Fire Marshal, if applicable.
 - 2) The Division of the State Architect shall be notified 48 hours in advance of the first pour of concrete.

13. PERMITS AND TAXES

- a. The Contractor shall obtain and pay for all permits, fees and licenses that are required in order to perform the work under this Contract. The District shall pay connection charges and meter costs for new permanent utilities required by these Contract Documents. The Contractor shall notify the District sufficiently in advance to submit requests for service to the appropriate utility companies so as to insure connections or installation of utility services in accordance with the Project schedule.
- b. The Contractor shall pay for all taxes on materials and equipment. The District is exempt from Federal Excise Tax. Contractor shall not pay Federal Excise Tax on any item in this Contract.

14. PATENTS AND ROYALTIES

All fees or claims for patents, royalties or licenses on materials, equipment or processes used in the performance of work on this Project shall be included in the amount of the Bid. The Contractor

shall indemnify, defend, and hold harmless the District, its Governing Board, the Architect, and their officers and employees, from all claims or liability, including costs and expenses, which may arise from the use on this Project of any patented or copyrighted materials, equipment, or processes.

15. SAFETY AND FIRE PREVENTION

- a. The Contractor, Subcontractors and all of their agents and employees shall fully comply with all of the provisions and requirements of CAL/OSHA, Title 8, California Code of Regulations and all other safety codes applicable to the Project. The Contractor shall take thorough precautions at all times for the protection of persons and property, and shall be liable for all damages to persons or property, either on or off the site, which occur as a result of Contractor's prosecution of the work. The Contractor shall obtain permits for, install and maintain in safe condition barricades, walkways, fences, railings, and whatever other safeguards that may be necessary to protect persons and property from damage as a result of the construction under this Contract.
- b. Contractor is required to ensure Material Safety Data Sheets ("MSDS") are available in a readily accessible place at the work site for any material requiring a MSDS pursuant to the federal "Hazard Communication" standard or employee "right to know" laws. Contractor is also required to ensure proper labeling on materials brought on the job site such that any person working with the material or within the general area of the material is informed of the hazards of the material and follows proper handling and protection procedures. A copy of the MSDS shall also be promptly submitted directly to the District.
- c. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the work and shall not cut or alter the work of any other contractor except with the written consent of the Architect, nor overload any new or existing structures by the placing or storage of materials, equipment, or other items thereon, and, if necessary, shall provide calculations proving the safety in so doing.
- d. If it is necessary to work at night, or where daylight is obscured, the Contractor shall provide and maintain lighting of an adequate level to properly prosecute the work, to permit the thorough inspection of same, and to ensure the safety to workers and others.
- e. Contractor shall take extraordinary care to prevent fires and keep all flammable materials and oily rags in tightly closed metal containers. Contractor shall exercise particular care when welding or cutting, and with regard to the disposition of waste materials, the nature and quantity of which might create or increase a fire hazard.

16. HAZARDOUS MATERIALS

Unless otherwise specified, this Contract does not include the removal, handling, or disturbance of any hazardous substances or materials encountered in the new construction or on the Project grounds. If such substances or materials are encountered, work shall cease in that area and the District shall be promptly notified to take appropriate action for removal or otherwise abating the condition in accordance with current regulations applicable to the District.

a. General

- 1) No asbestos, asbestos-containing products or other hazardous materials shall be used in this construction or in any tools, devices, clothing or equipment used to further this construction.

- 2) Asbestos and/or asbestos containing products shall be defined as all items containing but not limited to chrysotile, crocidolite, amosite, anthophyllite, tremolite or actinolite.
- 3) Any or all material containing greater than one tenth of one percent (>.1%) asbestos shall be defined as asbestos-containing material.
- 4) Any disputes involving the question of whether or not material contains asbestos shall be settled by electron microscopy; the cost of any such tests shall be paid by the Contractor.
- 5) All work or materials found to contain asbestos or work or material installed with asbestos containing equipment will be immediately rejected and this work shall be removed by the Contractor at no additional cost to the District.

b. Decontamination and Removal of hazardous material from prior work

- 1) Decontamination and removal of work found to contain asbestos or work installed with asbestos containing equipment shall be done only under the supervision of a qualified consultant, knowledgeable in the field of asbestos abatement and accredited by the Environmental Protection Agency ("EPA").
- 2) The asbestos removal contractor shall be an EPA-accredited contractor qualified in the removal of asbestos subject to the approval of the District.
- 3) The asbestos consultant shall be chosen and approved by the District which shall have sole discretion and final determination in this matter.
- 4) The work will not be accepted until asbestos contamination is reduced to levels deemed acceptable by the asbestos consultant.

c. Hold Harmless

- 1) Interface of work under this Contract with work containing asbestos shall be executed by the Contractor at Contractor's risk and at Contractor's discretion with full knowledge of the currently accepted standards, hazards, risks and liabilities associated with asbestos work and asbestos containing products. By execution of this Contract the Contractor acknowledges the above and agrees to hold harmless, as set forth in the indemnity provisions of this Contract, the Owner, its employees, agents and assigns for all asbestos liability which may be associated with this work and agrees to instruct Contractor's employees and agents with respect to the above-mentioned standards, hazards, risks and liabilities.
- 2) The Contractor shall, prior to commencement of this work, provide a duly signed and notarized affidavit that Contractor has instructed Contractor's employees and agents with respect to the above mentioned standards, hazards, risks and liabilities and the contents and requirements of this portion of the Contract Documents.

d. Certification

The Contractor agrees that materials containing asbestos or other hazardous materials as defined in Federal and State law shall not be used in construction.

17. TEMPORARY FACILITIES

- a. The Contractor shall obtain permits for, install and maintain in safe condition all scaffolds, hoisting equipment, barricades, walkways, or other temporary structures that may be required to accomplish the work. Such structures shall be adequate for the intended use and capable of safely accepting all loads that may be imposed upon them. They shall be installed and maintained in accordance with all applicable codes and regulations.
- b. The Contractor shall provide and maintain temporary heat from an approved source whenever in the course of the work it may become necessary for curing, drying or warming spaces as may be required for the proper installation of materials or finishes. The Contractor shall provide and maintain any and all facilities that may be required for dewatering in order that work may proceed on the Project. If it is necessary for dewatering to occur continually, the Contractor shall have on hand whatever spare parts or equipment that may be required to avoid interruption of service or work.
- c. The Contractor shall promptly remove all such temporary facilities when they are no longer needed for the work or on completion of the Project. The Contractor shall repair any damage to premises or property which resulted from the construction, use, or removal of temporary facilities and shall restore the premises and property to their original condition.
- d. See the Supplemental General Conditions and/or specifications for requirements concerning temporary sanitary facilities and utilities.

18. SIGNS

No signs may be displayed on or about the District's property (except those which may be required by law) without the District's prior written approval of size, content and location. Any signs required by the District will be designated in the Supplemental General Conditions.

19. TIME

- a. The Contractor shall commence the work on the date indicated in the Notice to Proceed. Time is of the essence regarding the Contract work, and the Contractor shall prosecute the work diligently and regularly at such a rate of progress as to ensure completion of this Project within, or sooner than, the time specified.
- b. The Contractors and Subcontractors shall investigate and become aware of the amount of time required for the delivery of all equipment and materials required to perform the work under this Contract, and no extension of time shall be granted due to failure to order the equipment and materials sufficiently before their incorporation into the work so as to avoid delay to the Project.
- c. The Contractor and Subcontractors shall provide and maintain enough manpower, materials and equipment to ensure a rate of construction progress that will complete the Project within or sooner than the time specified and according to the schedule of work. If, in the District's opinion, the Contractor and/or Subcontractors are not prosecuting the work at a sufficient rate of progress to meet the Project schedule, the District may direct the Contractor to provide additional manpower, materials or equipment, or to work additional hours, holidays or weekends without additional cost to the District until the work is progressing in a manner satisfactory to the District. Failure to prosecute the work in a

timely manner according to the Project schedule is considered a breach of Contract and shall be cause for termination of the Contract.

20. CONSTRUCTION SCHEDULE

- a. Within fifteen (15) calendar days after the award of the Contract, the Contractor shall prepare and submit to the Architect and District an as-planned construction schedule showing in detail how the Contractor plans to prosecute the work within the time set for Final Completion. The schedule shall include the work of all trades necessary for construction of the Project, and shall be sufficiently complete and comprehensive to enable progress to be monitored on a day-by-day basis. The information for each activity shall include at a minimum the activity description, duration, start date and completion date.
- b. The Contractor shall take care in the preparation of the schedule to ensure that it represents an accurate and efficient plan for accomplishing the work. If the Project is more than one week behind schedule, it must be promptly revised showing how the Contractor plans to complete the work, but in no case shall it show a completion date later than that required by the Contract, unless a time extension has been granted. The current schedule shall be kept posted in the Contractor's project office on site.
- c. The Contractor shall be responsible for the coordination of all work necessary and pertaining to the construction whether actually a part of this Contract or attendant thereto. The Contractor shall notify the District and various utility companies, as far as possible in advance of their required work, in order that work schedules may be developed for all concerned, which will permit the most effective and timely accomplishment of the entire Project.

21. DELAYS AND TIME EXTENSIONS

- a. The Contractor may be granted a time extension if the Contractor encounters an unavoidable delay of the work due to causes completely beyond the Contractor's control and which the Contractor could not have avoided by the exercise of reasonable care, prudence, foresight and diligence. Causes for which a claim for extension of time may be made include: acts of the public enemy, acts of another contractor in the performance of another contract with the District, priority of a governmental agency for materials or equipment, fire, flood, violent wind storm, epidemic, quarantine restriction, strike, freight embargo, or weather of an unusually severe nature. The Contractor will not be granted time extensions for weather conditions which are normal for the location of the Project, according to the U. S. Weather Bureau Records.
- b. A request for extension of time and compensation related thereto shall be made in writing to the Architect and District within ten (10) calendar days of the date the delay is encountered, or shall be deemed waived. The request shall include a detailed description of the reasons for the delay and corrective measures by the Contractor. The request shall be accompanied by evidence that the insurance policies required by the Contract shall be in effect during the requested additional period of time. In order for the Architect to consider a request for time extension, the Contractor must prove that the reasons stated for the delay actually caused a delay in portions of the work which will result in completion beyond the date specified in the Contract. The Contractor may also be granted a time extension for a significant change in the scope of work which request for extension of time shall be included in a Contract modification proposal.

- c. No damages or compensation or any kind shall be paid to a Contractor because of delays in the progress of work, whether such delays be avoidable or unavoidable, that are not the responsibility of District. District's liability to Contractor for delays for which District is responsible shall be limited to an extension of time unless such delays were unreasonable under the circumstances involved and were not within the contemplation of the parties when the Contract was awarded. The Contractor shall provide to the District the actual, substantiated costs to Contractor for which the Contractor may claim damages from District. Such costs, if any, shall be directly related to the Project, and shall not include costs that would be borne by the Contractor in the regular course of business, including, but not limited to, office overhead and ongoing insurance costs. Delay damages shall not include Contractor or Subcontractor markup for overhead and profit, but only actual, documented, and direct actual costs. The District shall not be liable for any damages which the Contractor could have avoided by any reasonable means including, but not limited to, the more judicious handling of forces or equipment.
- d. The granting of an extension of time because of unavoidable delays shall in no way operate as a waiver on the part of the District of the right to collect liquidated damages for other delays or of any other rights to which the District is entitled.

22. LIQUIDATED DAMAGES

- a. The parties understand and agree that the goodwill, educational process, and other business of District will be damaged if the Project is not completed within the time limits required. The parties have further agreed that the exact amount of damages for failure to complete the Work within the time specified is, in some cases, extremely difficult, impractical, or impossible to determine. As to those damages that are difficult, impractical, or impossible to determine, should the Contractor fail to achieve Final Completion of this Contract within the time fixed for Final Completion, together with extensions granted by the District for unavoidable delays, Contractor shall become liable to the District in the amount specified in the Contract per calendar day for each day the Contract remains incomplete beyond the time for Final Completion, as liquidated damages and not as a penalty. Contractor shall not be charged with liquidated damages when the delay in completion of the work beyond the time for Final Completion is due to acts of the District.
- b. In addition to any liquidated damages which may be assessed, if Contractor fails to achieve Final Completion of this Contract within the time fixed for Final Completion, together with extensions granted by the District for unavoidable delays, and if as a result District finds it necessary to incur any costs and/or expenses, or if District receives any claims by other contractors, subcontractors, or third parties claiming time or other compensation by reason of Contractor's failure to complete work on time, Contractor shall pay all those costs and expenses incurred by District. These costs and expenses may include but are not limited to such items as rental payments, inspection fees, and additional architectural fees, whether related to the acquisition of facilities or caused by the delay in completion.
- c. Any money due or to become due the Contractor may be retained to cover liquidated and other delay damages. Should such money not be sufficient to cover those damages, the District shall have the right to recover the balance from the Contractor or Contractor's sureties.
- d. Should the District authorize suspension of the work for any cause, the time work is suspended will be added to the time for completion. Suspension of the work by the

District shall not be a waiver of the right to claim liquidated or other delay damages as set forth in this section.

23. DISTRICT'S RIGHT TO STOP WORK; TERMINATION OR SUSPENSION OF THE CONTRACT

a. District's Right to Stop Work:

In addition to or as an alternative to any and all other remedies available to the District, if the Contractor fails to correct work which is not performed in accordance with the Contract Documents, or if the Contractor persistently fails to perform the work in accordance with the Contract Documents, the District may by written order direct the Contractor to stop the work, or any portion thereof, until the cause for such order has been eliminated to the satisfaction of the District. However, the right of the District to stop the work shall not give rise to a duty on the part of the District to exercise this right for the benefit of the Contractor or any other person or entity, and the failure of the District to do so shall not be raised as a defense to the Contractor's failure to perform the work in accordance with the Contract Documents.

b. Termination for Cause:

1) If the Contractor refuses or fails to furnish sufficient materials, work force, equipment, and appurtenances to properly prosecute the work in a timely manner, or if Contractor refuses or fails to comply with any provisions of the Contract Documents, or if Contractor should file a bankruptcy petition or make a general assignment for the benefit of Contractor's creditors or if a receiver should be appointed on account of Contractor's insolvency, then the District may give the Contractor and Contractor's Surety written notice of intention to terminate the Contract. Unless within seven (7) calendar days after the serving of such notice upon the Contractor and Contractor's Surety such violation shall cease and arrangements for correction of such conditions shall be made satisfactory to the District, the Contract shall cease and terminate. In the event of such termination, the District shall immediately serve written notice thereof upon the Contractor and Contractor's Surety.

2) In the event of termination for cause, in addition to all remedies available to the District, the Contractor's Surety shall have the right to take over and perform the Contract; provided, however, that if the Surety does not commence performance within five (5) calendar days from the date of the issuance of such notice of termination, the District may take over the work and prosecute the same to completion by letting another Contract, or by any other method that the District deems advisable. The Contractor and Contractor's Surety shall be liable for any excess cost incurred by the District thereby, and in any such event the District may take possession of such materials, equipment, and other property belonging to the Contractor as may be on the site and use same in completing the work.

c. Termination or Suspension for Convenience:

The District reserves the right, in its sole discretion, to terminate or suspend all or part of the Contract for convenience following three (3) days written notice to the Contractor. In the event of termination or suspension for convenience, Contractor shall have no claims against the District, except:

- 1) The actual cost of labor, materials and services provided pursuant to the Contract, and which have not yet been paid for, as documented by timesheets, invoices, receipts and the like; and
- 2) Five percent (5%) of the total cost of the work performed as of the date of notice of termination or suspension or five percent (5%) of the value of the work yet to be completed, whichever is less. The parties agree that this amount shall constitute full and fair compensation for all Contractor's lost profits and other damages resulting from the termination or suspension for convenience.

24. ASSIGNMENT OF CONTRACT

The Contractor may not assign or delegate all or any portion of this Contract without the written consent of the District and no such consent shall be given which would relieve the Contractor or its Surety of their responsibilities under the Contract. The Contractor may assign, without liability to the District, monies due the Contractor under the Contract to banks, trust companies or other financial institutions provided written notice thereof is promptly delivered to the District. Assignment of monies earned by the Contractor shall be subject to the same retention as other payments made to Contractor, and shall also be subject to setoffs and back charges as provided by this Contract.

25. COORDINATION WITH OTHER CONTRACTS

- a. The District reserves the right to do other work or award other contracts in connection with this Project. By entering into this Contract, Contractor acknowledges that there may be other contractors on or adjacent to the Project site whose work must be coordinated with that of its own. Contractor expressly warrants and agrees that it will cooperate with other contractors and will do nothing to delay, hinder, or interfere with the work of other contractors, or that of the District, its Architect and Construction Manager. Contractor also expressly agrees that in the event its work is hindered, delayed, interfered with, or otherwise affected by a separate contractor, its sole remedy will be a direct action against the separate contractor. To the extent allowed by law, the Contractor expressly waives any remedy against the District, its Architect and Construction Manager on account of delay, hindrance, interference or other such events caused by a separate contractor.
- b. If any part of Contractor's work depends upon the work of a separate contractor, Contractor shall inspect such other work and promptly report in writing to the District and Architect any defects in such other work that render it unsuitable to receive the work of Contractor. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other contractor's work, except as to defects which the Contractor could not have detected through the reasonable inspection of the other contractor's work prior to the execution of Contractor's work.
- c. If Contractor is aware of a current or potential conflict between Contractor's work and the work of another contractor on the site, and is unable to informally resolve the conflict directly with the other contractor, Contractor shall promptly provide written notice to the District, with a copy to the Architect and the other contractor, specifying the nature of the conflict, the date upon which the conflict arose, and the steps taken to attempt to resolve the conflict. The District may issue written instructions to address the conflict.
- d. If, through Contractor's negligence, any other contractor or subcontractor shall suffer loss or damage to the work, Contractor shall make a reasonable effort to settle with such other contractor and subcontractor by agreement or arbitration. If such other contractor or subcontractor shall assert any claim against the District or Architect, on account of any damage alleged to have been so sustained, the District or Architect shall notify the

Contractor, who shall defend such proceedings at Contractor's own expense and save harmless and indemnify the District and the Architect from any such claim.

26. SUBMITTALS: SHOP DRAWINGS, CUTS AND SAMPLES

- a. Five (5) copies of shop drawings, brochures and cuts and samples in quantities specified by the Architect shall be submitted to the Architect for all items for which they are required by the plans and Specifications. Prior to transmittal, the Contractor shall examine all submittals for accuracy and completeness in order to verify their suitability for the work and compliance with the Contract Documents and shall sign and date each submittal. Submittals shall be made sufficiently before the items are required for the work so as to cause no delay and shall be in accordance with the Project construction schedule.
- b. In addition to information furnished as common practice, submittals shall contain the Project name and location, Contractor's name and address, Subcontractor's or supplier's name and address, date of submittal and any revisions, and reference to appropriate specification section, and/or drawing and detail numbers. The Contractor and/or the Subcontractors shall verify in the field all dimensions and relationships to adjacent work necessary to ensure the proper fit of the items submitted. If necessary, the Contractor shall make any corrections required and resubmit with all due haste in the same number as initially required.
- c. Review of submittals, shop drawings, cuts or samples by the District or Architect shall not relieve the Contractor from complying with the requirements of the Contract Documents.
- d. Any materials or equipment installed without approval shall be at the Contractor's own risk, and Contractor may be required to remove any such materials or equipment and install the specified items at Contractor's own cost, including repairs to adjacent work.

27. PAYMENTS

a. Cost Breakdown:

Prior to submitting Contractor's first request for payment, the Contractor shall prepare and submit to the Architect and District a cost breakdown (schedule of values) showing the major work items for each trade or operation required in construction of the Project. The work items shall be sufficiently detailed to enable the Architect to accurately evaluate the completion percentages requested by the Contractor. The cost for each work item shall include overhead and profit. The total of all work item costs shall equal the amount of the Contract.

b. Scope of Payment:

Payment to the Contractor at the unit price or other price fixed in the Contract for performing the work required under any item or at the lump sum price fixed in the Contract for performing all the work required under the Contract shall be full compensation for furnishing all labor, materials, equipment and tools necessary to the work, and for performing and completing, in accordance with the Specifications, all work required under the item or under the Contract, and for all expense incurred by the Contractor for any purpose in connection with the performance and completion of the work.

c. Progress Payments:

The Contractor will, on or about the last day of each month, make an estimate of the value of the work completed by Contractor in the performance of the Contract. These estimates shall be subject to the review and approval of the Architect. The first such estimate will be of the value of the work completed after the Contractor commenced the performance of the Contract, and every subsequent estimate, except the final estimate, will be of the value of the work completed since the immediately preceding estimate. Such estimates will be based on labor, materials and equipment incorporated into the work, and items of materials and equipment delivered to the Project. The Contractor shall be responsible for the security and protection of such materials and equipment delivered to the Project and not incorporated in the work. Within thirty (30) calendar days after the approval of each estimate for progress payment, the District will pay to the Contractor an amount equal to ninety five (95) percent of the approved estimate, unless a different retention percentage is stated in the Notice Inviting Bids, in which case that percentage applies. Payments may at any time be withheld if in the judgment of the District the work is not proceeding in accordance with the Contract Documents, the Contractor is not complying with the requirements of the Contract, stop notices have been timely filed, the estimate contains an error, or the District has incurred costs or requests reasonable financial assurances regarding defective work by the Contractor.

d. Final Payment:

Within thirty (30) days after all required work is fully completed in accordance with the Contract Documents, the Contractor shall submit a final invoice for the total value of the work completed in accordance with the Contract, which shall be subject to review and approval by the District. As required by law, District shall pay Contractor the unpaid balance of the Contract price of the work, or the whole Contract price of the work if no progress payment has been made, determined in accordance with the terms of the Contract, less such sums as may be lawfully retained under any provision of the Contract, including, but not limited to, amounts retained as liquidated damages, for stop notices, for third-party claims for which the Contractor is required to indemnify the District, for defective work and costs incurred by the District in connection therewith, or for other such claims and damages attributable to the Contractor ("Final Payment"). Prior progress estimates and payments are subject to correction in the Final Payment. Tender of the Final Payment shall constitute denial by the District of any unresolved claim. Contractor's acceptance of the Final Payment shall operate as a full and final release to the District and its agents from any and all unasserted claims Contractor has, or may have, related to this Contract.

e. Payments Do Not Imply Acceptance of Work:

The granting of any progress payment or payments by the District or the receipt thereof by the Contractor shall not constitute acceptance of the work or of any portion thereof, and shall in no way lessen the liability of the Contractor to replace unsatisfactory work or material, whether or not the unsatisfactory character of such work or material was apparent or detected at the time such payment was made.

f. Retention of Sums Charged Against Contractor:

It is mutually understood and agreed that when under any provision of this Contract the District shall charge any sums of money against the Contractor, the amount of such charge shall be deducted and retained by the District from the amount of the next succeeding progress estimate, or from any other monies due or that may become due the Contractor on account of the Contract. If on completion or termination of the Contract such monies due the Contractor are found insufficient to cover the District's charges against the Contractor, the District shall have the right to recover the balance from the Contractor or the Contractor's Sureties.

g. Release:

The Contractor and each assignee under an assignment in effect at the time of Final Payment shall, if required by the District, execute and deliver at the time of Final Payment and as a condition precedent to Final Payment, a release in form and substance satisfactory to and containing such exemptions as may be found appropriate by the District, discharging the District, its officers, agents and employees of and from liabilities, obligations and claims arising under this Contract.

h. Payment to Subcontractors and Suppliers:

The Contractor shall pay each Subcontractor and supplier promptly on receipt of each progress payment from the District for the materials, labor and equipment delivered to the site or incorporated in the work by each Subcontractor during the period for which the progress payment is made, less any retention as provided above.

i. Stop Notice Costs:

The District reserves the right to charge the Contractor or Surety, or to withhold from release of retention, all costs incurred by the District, including attorney's fees, for processing and defending stop notice claims.

28. MODIFICATIONS OF CONTRACT

a. Changes In The Work:

- 1) The District, before the date of acceptance of the work, may, without notice to the Sureties, order changes in the work ("Modifications"), may order extra materials and extra work in connection with the performance of the Contract, and the Contractor shall promptly comply with such orders. All Modifications must be approved by DSA and the State Fire Marshall, if applicable, as required by law.
- 2) If changes ordered in design, workmanship or materials are of such a nature as to increase or decrease the cost of any part of the work, the price fixed in the Contract shall be increased or decreased by such amount as represents the reasonable and proper allowance for the increase or decrease in the cost of the work in accordance with the provisions of this Article, and any other applicable terms of the Contract, including, but not limited to, the Contractor's schedule of values and the price for allowances, if any. Except as provided by law, the total cost of all Modifications shall not exceed ten (10) percent of the original Contract price.
- 3) In the case of a disputed work item, the District may direct the Contractor to perform the disputed work at no additional cost to the District on the grounds that the work is adequately indicated in the Contract Documents, and therefore already included in the Contract price. If the Contractor maintains that the disputed work represents a modification to the Contract, Contractor may submit a claim in accordance with Article 50, Resolution of Construction Claims. Notwithstanding any dispute regarding the requirements of the Contract Documents, Contractor shall promptly and fully comply with the District's directive. Contractor's failure to do so shall be deemed a material breach of this Contract, and in addition to all other remedies, District may, at its sole discretion, hire another contractor and/or use its own forces to complete the disputed work at

Contractor's sole expense, and may deduct the cost of such work from the Contract price.

b. Cost Breakdown:

When the Modification is proposed, the Contractor shall furnish a complete breakdown of actual costs of both credits and extras, itemizing materials, labor, taxes, overhead and profit. Subcontract work shall be so indicated. All costs must be fully documented. The following limitations shall apply:

1) Limitations Where Contract Price Changes are Involved:

- (a) Overhead and Profit for the Contractor. The Contractor's overhead and profit on the cost of subcontracts shall be a sum not exceeding ten percent (10%) of such costs. The Contractor's overhead and profit on the costs of work performed by the Contractor shall be a sum not exceeding fifteen percent (15%) of such costs. Overhead and profit shall not be applied to the cost of taxes and insurance by Contractor or Subcontractors or to credits. No processing or similar fees may be charged by the Contractor in connection with the Modification. "Overhead and profit" shall include all plant, equipment rental and repair, project management, field coordination, job site project supervision and indirect labor and materials.
- (b) Bond Premiums. The actual rate of bond premiums as paid on the total cost (including taxes) will be allowed, but with no markup for profit and overhead.
- (c) Taxes. State and city sales taxes should be indicated. Federal excise tax shall not be included. (District will issue an exemption on request.)

2) Change Order Certification:

All change orders and requests for proposed change orders shall be deemed to include the following certification by the Contractor:

"The undersigned Contractor approves the foregoing as to the changes in work, if any, and as to the Contract price specified for each item and as to the extension of time allowed, if any, for completion of the Project as stated herein, and agrees to furnish all labor, materials, and service and to perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of claims which have no basis in fact or which Contractor knows are false are made at the sole risk of the Contractor and may be a violation of the False Claims Act, as set forth in Government Code §§12650 *et seq.* It is understood that the changes to the Contract Documents set forth herein shall only be effective upon approval by the Governing Board of the District.

"It is expressly understood that the value of the extra work or changes expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the Project or resulting from delay to the Project. Any costs, expenses, damages, or time extensions not included herein are deemed waived."

c. Unit Prices, Schedule of Values, or Allowances:

Where Unit Prices, a Schedule of Values, and/or Allowances are required by the Contract Documents, that pricing shall govern in computing any additions to or deductions from the Contract price on account of any added or omitted work. Unit Prices listed in the original bid include all costs and no addition of any description will be allowed.

d. Time and Materials:

If it is impractical, because of the nature of the work, or for any other reason, to fix an increase in price in advance, the Change Order may fix a maximum price which shall not under any circumstances be exceeded, and subject to such limitation, such alteration, modification or extra shall be paid for at the actual necessary cost as determined by the sum of the following items (1) to (5) inclusive:

- 1) Labor, including premium on compensation insurance and charge for Social Security taxes, and other taxes pertaining to labor.
- 2) Material, including sales taxes and other taxes pertaining to materials.
- 3) Plant and equipment rental, to be agreed upon in writing before the work is begun. No charge for the cost of repairs to plant or equipment will be allowed.
- 4) Overhead and profit computed at fifteen percent (15%) of the total of Items (1) to (3) inclusive.
- 5) The proportionate cost of premiums on bonds computed at one and one-half percent (1-1/2%) of the total of items (1) to (4) inclusive.

If the Time and Materials work is done by a Subcontractor, the amount shall be determined as set forth above under items (1) to (5) inclusive. The Contractor's overhead and profit on the costs of subcontracts (exclusive of taxes and insurance) shall not exceed ten percent (10%) of such costs.

The District reserves the right to furnish such materials as it may deem expedient, and no allowance will be made for profit thereon. The above-described methods of determining the payment for work and materials shall not apply to the performance of any work or the furnishing of any material which, in the judgment of the District, may properly be classified under items for which prices are established in the Contract.

e. Oral Modifications:

No oral statements of any person shall in any manner or degree modify or otherwise affect the terms of the Contract.

29. INDEMNITY

Contractor shall defend with counsel acceptable to the District, indemnify and hold harmless to the full extent permitted by law, the District and its Board of Trustees, officers, agents, Architect, construction manager, employees and volunteers from and against any and all liability, loss, damage, claims, expenses, fines, judgments and costs (including, without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature arising out of or in connection with Contractor's performance of the Project or its failure to comply with any of its obligations contained in these Contract Documents, except such Liability caused by the active negligence, sole negligence or willful misconduct of the District. Such indemnification shall extend to all claims, demands, or liabilities occurring after completion of the project as well as during the

progress of the work. Pursuant to Public Contract Code §9201, District shall timely notify Contractor of receipt of any third-party claim relating to this Project.

30. WARRANTY OF TITLE

Contractor warrants that title to all work, materials or equipment included in a request for payment shall pass and transfer to the District whether or not they are installed or incorporated in the Project, free from any claims, liens or encumbrances, when such payment is made to the Contractor. Contractor further warrants that no such work, materials or equipment have been purchased for work under the Contract subject to an agreement by which an interest therein or an encumbrance thereon is retained by the seller or supplier.

31. USE OF COMPLETED PARTS OF THE WORK BEFORE ACCEPTANCE

Whenever the work or any part thereof is in a condition suitable for use, and the best interest of the District requires such use, as determined by the District, the District may take possession of, connect to, open for public use, or use the work or a part thereof. When so used, maintenance and repairs due to ordinary wear and tear or vandalism will be made at District's expense. The use by the District of the work or part thereof as contemplated in this section shall in no case be construed as constituting acceptance of the work or any part thereof, including, but not limited to, the right to assess liquidated damages. Such use shall neither relieve the Contractor of any of Contractor's responsibilities under the Contract nor act as a waiver by the District of any of the conditions thereof. Contractor shall continue to maintain all insurance, including Builder's Risk insurance, on the entire Project, and diligently pursue full completion of the work.

32. GUARANTEE AND WARRANTY

- a. By signing this Contract, Contractor agrees to the following guarantee and warranty:

Guarantee & Warranty

Contractor hereby guarantees and warrants its work on the Project for a period of two (2) years from the date of the filing of the Notice of Completion as follows.

Contractor shall promptly repair or replace to the satisfaction of the District any or all work that appears defective in workmanship, equipment and/or materials for whatever reason, ordinary wear and tear and unusual abuse or neglect excepted, together with any other work which may be damaged or displaced in so doing.

Contractor agrees to promptly correct and remedy any failure by the Contractor to conform its work, activities and services to the requirements of the Contract Documents.

In the event of the Contractor's failure to comply with the above-mentioned obligations within the ten (10) calendar days of notice, or sooner if required by an emergency, Contractor hereby authorizes the District to have the

defects or deficiencies repaired, remedied, corrected and made good at Contractor's expense, and Contractor shall pay the costs and charges therefore upon demand. The Surety agrees to be responsible for these costs and charges as well.

33. PROTECTION OF WORK AND PROPERTY

- a. The Contractor shall be responsible for each operation and all work on the Project, both permanent and temporary. The Contractor shall protect the work and materials from damage due to negligence, the action of the elements, the carelessness of third parties, vandalism, or any other cause whatsoever, until the final completion and acceptance of the Project. Should improper work by the Contractor be covered by another contractor and damage or defects result, the whole work affected shall be made good by the Contractor to the satisfaction of the Architect and District without expense to the District. The Contractor shall take reasonable care to avoid damage to existing facilities or utilities, whether on the Project or adjacent to it, and Contractor shall be liable for any damage thereto or interruption of service due to Contractor's operations. If the Contractor encounters any facilities or utilities not shown on the drawings or not reasonably inferable therefrom, Contractor shall promptly notify the Architect about them, and shall do no further work which may cause damage to same. If it is determined that some action needs to be taken regarding facilities not shown, the Contractor will be given directives on what action to take, and any additional cost to the Contractor incurred thereby will be handled by Change Order.
- b. The property limits of the area of the Project are indicated on the drawings. Except for work specifically shown or noted, Contractor shall confine Contractor's operations within the indicated property limits. The Contractor shall provide, install, and maintain all shoring, bracing and underpinning necessary to support adjacent property, streets, buildings and structures, that may be affected by building operations for this work; shall serve or cause to be served all legal notices to adjoining property owners that may be necessary for their protection; and shall protect from damage all adjacent buildings, fences, landscaping, and repair or replace any such property damaged in the course of work under the Contract.

34. USE OF ROADWAYS AND WALKWAYS

The Contractor shall not unnecessarily interfere with use of any roadway, walkway or other facility for vehicular or pedestrian traffic by any party entitled to use it. Wherever such interference becomes necessary for the proper and convenient performance of the work and no satisfactory detour route exists, the Contractor shall, before beginning the interference, provide a satisfactory detour, temporary bridge, or other proper facility for traffic to pass around or over the interference and shall maintain it in satisfactory condition as long as the interference continues, all without extra payment unless otherwise expressly stipulated in the Contract Documents.

35. MATERIALS

- a. Unless explicitly stated otherwise, all specified equipment and material comprising the work of this Contract, as being provided or furnished or installed, shall imply the inclusion of all components, hardware and accessories, required for complete installation and satisfactory operation as intended by the manufacturer. Wherever the method of

installation of any material is not explicitly specified, the installation shall be as recommended by manufacturer.

- b. Wherever in the Contract Documents it is provided that the Contractor shall furnish materials or equipment for which no detailed specifications are set forth, such materials or equipment shall be new and of the best grade for the purpose for which they will be used when incorporated in the work. Materials specified by reference to a number or symbol of a specific standard, such as A.S.M., Federal Specification, State Standard, Trade Association, or similar standards, shall comply with requirements in the latest revision thereof and any amendment or supplement in effect on the date of the notice inviting bids.
- c. None of the materials to be provided furnished or installed on this project shall contain asbestos or any other "hazardous substance" as that term is defined by federal or state law.

36. SUBSTITUTIONS

- a. Wherever in the drawings or Specifications a material or product is called for by trade or brand names or manufacturer and model number, alternative items of equal quality and purpose may be proposed for use by the Contractor. The burden of proof of equality is on the Contractor, and Contractor shall furnish all information and supplies necessary for the Architect to make a thorough evaluation of the proposed substitution. The Architect's decision about the equality of the proposed substitution is final, and if the proposed substitution is not approved, the Contractor shall install the item called for. Proposed substitutions and any changes in adjacent work caused by them shall be made by the Contractor at no additional cost to the District.
- b. Proposed substitutions shall be submitted sufficiently before actual need to allow time for thorough evaluation. Substitutions shall not be proposed for the reason that submittals were not made early enough to avoid delay. Architect's review of substitutions shall not relieve the Contractor from complying with the requirements of the drawings and Specifications.
- c. In the event Contractor makes substitutions in materials, equipment, or designs, with or without the District's approval, other than those authorized herein, the Contractor shall then assume full responsibility for the effects of such substitutions on the entire Project, including the design, and shall reimburse the District for any charges resulting from such substitutions, including any charges for modifications in the work of other trades, and including any charges for additional design and review, plus reasonable and customary mark-ups.

37. TESTING

- a. Materials, equipment, or other work requiring tests may be specified in the Contract Documents, and they shall be adequately identified and delivered to the site in ample time before intended use to allow for testing. If such materials, equipment or other work should be covered without required testing and approval, they shall be uncovered at the Contractor's expense, including any repairs or replacement resulting therefrom. The Contractor shall notify the District and Architect when and where such materials, equipment or other work are ready for testing, and Contractor shall bear the cost of making them available for testing. The Contractor shall notify the District and Architect sufficiently before the need for testing so as to cause no delay in the work and, in any case, at least forty-eight (48) hours prior to the need for testing.

- b. The cost of initial tests called for will be paid by the District and will be performed by independent testing consultants retained by the District. All other tests and inspections specified or otherwise required to substantiate compliance with specified requirements for quality of material or performance of operation shall be paid for by the Contractor. If retesting or additional testing is necessary because of substandard initial test results, the costs thereof shall be paid by the Contractor, including any repairs or replacement resulting therefrom.

38. INSPECTION

- a. All materials, equipment and workmanship used in the work of the Project shall be subject to inspection or testing at all times and locations during construction and/or manufacture. The District's and Architect's authorized representatives and representatives of other agencies having authority over the work shall have access to the work for the above purposes at all reasonable times and locations. Any material or work found to be unsatisfactory or not according to the Contract Documents shall be replaced with the correct material or work and the defective items promptly removed, all at the Contractor's expense, when directed to do so by any of the above-named persons having authority over the work. The cost of review time and analysis by the Architect or other District consultants necessitated by incomplete or defective work by the Contractor shall be charged to the Contractor.
- b. Inspection and testing by the District or its representatives shall not relieve the Contractor from complying with the requirements of the Contract Documents. The Contractor is responsible for its own quality control.
- c. Whenever required by the District or Architect, the Contractor shall furnish all tools, labor and materials necessary to make an examination of work in place by uncovering the same. Should such work be found unsatisfactory, the cost of examination and reconstruction shall be paid by the Contractor. Should such work be found satisfactory, the cost of examination and reconstruction of the work shall be paid by Change Order unless the Contractor improperly covered the work before it could be inspected or tested. If the Contractor considers it necessary or desirable to work on Saturday, Sunday or a holiday, Contractor shall seek written approval from the District at least forty-eight (48) hours before the commencement of such work.

39. CLEANUP

- a. The Contractor shall maintain the premises and area of the work in a neat and clean condition. No burning of rubbish on site shall be allowed. The Contractor shall control dust on the site by sprinkling at whatever intervals are necessary to keep it laid down and shall take measures to prevent dust and debris from being accidentally transported outside the area of the work.
- b. Final cleaning, such as sweeping, dusting, vacuuming, dry and wet mopping, polishing, sealing, waxing and other finish operations normally required on newly installed work shall be taken to indicate the finished conditions of the various new and existing surfaces at the time of acceptance. Prior to the time of acceptance, all marks, stains, fingerprints, dust, dirt, splattered paint and blemishes resulting from the various operations shall be removed throughout the Project. Stair treads and risers shall be wet-mopped. Glass shall be left clean and polished both inside and outside. Plumbing fixtures and light fixtures shall be washed clean. Hardware and other unpainted metals shall be cleaned and all building papers and other temporary protections shall be removed throughout the building, or portion of the building where Contractor was involved, all to the satisfaction of the

Architect and District. The exterior of the buildings, playfields, exterior improvements, and planting spaces and other work areas shall be similarly clean and in good order.

40. CONSTRUCTION WASTE MANAGEMENT REQUIREMENTS

a. Scope

- 1) This Article includes requirements for the diversion by the Contractor of construction and demolition debris from landfills. The Contractor shall develop and implement a Waste Management Plan as specified herein. The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all subcontractors, vendors, and suppliers to participate in the effort.
- 2) The District has established that this Project shall generate the least amount of waste practicable and that processes shall be utilized that ensure the generation of as little waste as possible due to over-packaging, error, poor planning, breakage, mishandling, contamination or other factors.
- 3) As much of the waste materials as economically feasible shall be reused, salvaged or recycled. Waste disposal in landfills shall be minimized.
- 4) The Contractor is encouraged to use waste hauling companies that separate recyclable materials. The Contractor shall work with its waste haulers in providing other recycling methods as appropriate.
- 5) The Contractor is responsible for implementation of any special programs involving rebates or similar incentives related to the recycling of waste. Revenues or other savings obtained for salvage or recycling accrue to the Contractor.

b. References

- 1) "Builders' Guide to Reuse and Recycling, A Directory for Construction and Demolition Materials."
- 2) "Construction Site Recycling, a Guide for Building Contractors ". For a copy of the guide call 1-888-442-2666 or go to www.recycleworks.org.
- 3) "Where to Recycle Construction and Demolition Debris." For a copy of the guide call 1-888-442-2666 or go to www.recycleworks.org.

c. Definitions

- 1) General: Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work.
- 2) Divert" means to use material for any lawful purpose other than disposal in a landfill or transfer facility for disposal
- 3) "Recycling Service" means an off-site service that provides processing of material and diversion from a landfill.
- 4) "Hauler" means the entity that transports construction and demolition

debris to either a landfill or a recycling service.

d. Compliance with regulatory requirements:

- 1) The Contractor shall perform all handling, storage, transportation and disposal of construction debris in compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinance, codes and standards.
- 2) Nothing stated on the drawings, in this Article 40 or in any other provision of the Contract Documents shall be construed as allowing work that is not in strict compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinances, codes and standards.

e. Performance Requirement

- 1) The Contractor shall divert a minimum of 50 percent (50%) of the total Project construction and demolition waste from landfills.

f. Quality Control

- 1) General:
 - i) The Contractor shall not permit materials designated for diversion to become contaminated or to contaminate the site or surrounding areas.
- 2) Training and Coordination:
 - i) The Contractor shall designate an on-site party [or parties] who will be responsible for instructing workers and subcontractors, and overseeing and documenting the results of the Waste Management Plan for the Project.
 - ii) The Contractor shall furnish copies of the Waste Management Plan to all on-site supervisors, each subcontractor, and the District's representative.
 - iii) The Contractor shall include construction waste management as an item on the agenda of all progress meetings.
- 3) The Waste Management Plan:
 - i) The Contractor shall prepare a Waste Management Plan for diverting the specified percentage of construction debris from landfills, including written and graphic information indicating how the waste will be diverted.
 - ii) Include in the plan both on-site recycling of construction debris and off-site diversion from landfills.
 - iii) Identify the means and methods for collecting and separating each type of debris deemed reusable or recyclable.
 - iv) List the off-site recycling service and hauler of each designated debris item who has agreed to accept and divert that item from the landfill in the proposed quantities anticipated. List the service and hauler company name, address, telephone number, and persons contacted.
 - v) List the name of individuals on the Contractor's staff responsible for waste prevention and management.

- vi) List the actions that will be taken to reduce solid waste generation, including coordination with subcontractors to ensure awareness and participation.
- vii) Describe the specific approaches to be used in recycling/reuse of the various materials generated, including the areas on site and equipment to be used for processing, sorting, and temporary storage of wastes.
- viii) Characterize the waste to be generated, including estimated types and quantities. Name the landfills and/or incinerator to be used.
- ix) List the specific waste materials that will be salvaged for resale, salvaged and reused on the Project, salvaged and stored for reuse on a future project, or recycled. Recycling facilities that will be used shall be identified by name, location, and phone number.
- x) Identify the materials that cannot be recycled or reused with an explanation or justification, to be approved by the Architect.

The Contractor shall submit the Plan to the Architect within 10 calendar days after receipt of the Notice to Proceed, or prior to any waste removal, whichever occurs first. The Contractor shall promptly revise and resubmit the Plan as required by the Architect. Review of the Contractor's Waste Management Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations or meeting Project diversion requirements.

g. Plan Implementation

- 1) The Contractor shall implement the approved Waste Management Plan.
- 2) The Contractor shall maintain a log of each load and of each category of waste that is diverted from the landfill. The Contractor shall separately log the debris sent to a Class III landfill and materials sent to recycling facilities.
- 3) The Contractor shall include in the log the type of load, load weight, name of the hauling service, recycling service or landfill, and the date accepted by the recycling service or by the landfill.
- 4) The Contractor shall retain and make available all weight tickets and copies of receipts and invoices relating to the implementation of the Plan.
- 5) The District reserves the right to audit the log at any time.

h. Material Handling

- 1) Designate a specific area or areas on site to facilitate the separation of materials for potential reuse, salvage, recycling, and return. Clearly mark bins for each category of waste.
- 2) Keep waste bins and pile areas neat and clean. Do not contaminate non-recyclable waste with materials designated for reuse or recycling.

i. Contractor's Responsibilities

- 1) Provide on-site instruction of the appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all parties at the appropriate

GENERAL CONDITIONS

stages of the Project.

- 2) Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in a manner that maximizes recyclability and salvagability of identified materials. Provide the necessary containers, bins and storage areas to facilitate effective waste management. Provide barriers and enclosures around recyclable material storage areas which are non hazardous and recyclable or reusable and which shall be located away from construction traffic. Provide adequate space for pick-up and delivery. Use cleaning materials that are non hazardous and biodegradable.

41. INSTRUCTIONS AND MANUALS

Three copies of the maintenance instructions, application/installation instructions and service manuals called for in the Specifications shall be provided by the Contractor. These shall be complete as to drawings, details, parts lists, performance data and other information that may be required for the District to easily maintain and service the materials and equipment installed under this Contract. All manufacturer's application/installation instructions shall be given to the Architect at least ten (10) days prior to first material application or installation of the item. The maintenance instructions and manuals, along with any specified guarantees, shall be delivered to the Architect for review prior to submitting to District, and the Contractor or appropriate Subcontractors shall instruct District's personnel in the operation and maintenance of the equipment prior to final acceptance of the Project.

42. AS-BUILT DRAWINGS

The Contractor and all Subcontractors shall maintain on the work site a separate complete set of contract drawings which will be used solely for the purpose of recording changes made in any portion of the work during the course of construction, regardless of the reason for the change. As changes occur, there will be included or marked on this record set on a daily basis if necessary to keep them up to date at all times. Actual locations to scale shall be identified on the drawings for all runs of mechanical and electrical work, including all site utilities installed underground, in walls, floors, and furred spaces, or otherwise concealed. Deviations from the drawings shall be shown in detail. All main runs, whether piping, conduit, duct work, drain lines, etc., shall be located in addition by dimension and elevation. Progress payments may be delayed or withheld until such time as the record set is brought up to date to the satisfaction of the Architect. The Contractor shall verify that all changes in the work are included in the "AS-BUILT" drawings and deliver the complete set thereof to the Architect for review and approval within thirty (30) calendar days after District's notice of completion. District's acceptance and approval of the "AS-BUILT" drawings are a necessary condition precedent to the release of the final retention.

43. SUBSTITUTION OF SECURITIES

- a. Pursuant to Public Contract Code §22300, Contractor may request in writing that it be allowed at its own expense to substitute securities for moneys withheld by District to ensure performance under this Contract. Only securities listed in Government Code §16430 and bank or savings and loan certificates of deposit, interest-bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and District shall qualify under this Article. Securities equivalent to the amount withheld shall be deposited with the District or with a state or federally chartered bank in California as the escrow agent. Upon satisfactory completion of the Contract and on written authorization by the District, the securities shall be returned to Contractor. Contractor shall be the beneficial owner of the securities and shall receive any interest

thereon. The Contractor may alternatively request District to make payment of retentions earned directly to the escrow agent at the expense of the Contractor.

- b. At the expense of the Contractor, the Contractor may direct the investment of the payments into securities and the Contractor shall receive the interest earned on the investments upon the same terms provided for above for securities deposited by Contractor. Upon satisfactory completion of the Contract, Contractor shall receive from the escrow agent all securities, interest, and payments received by the escrow agent from the District. The Contractor shall pay to each Subcontractor, not later than 20 days of receipt of payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention.
- c. Any escrow agreement entered into pursuant to this Article shall comply with Public Contract Code §22300 and shall be subject to approval by District's counsel.

44. NO DISCRIMINATION

It is the policy of the District that, in connection with all work performed under this public works contract, there shall be no discrimination against any prospective or active employee or any other person engaged in the work because of actual or perceived race, color, ancestry, national origin, ethnic group identification, religion, sex, gender, sexual orientation, age, physical or mental disability, or marital status. The Contractor agrees to comply with applicable Federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Government Code §12900, Government Code §11135, and Labor Code §§ 1735, 1777.5, 1777.6 and 3077.5. In addition, the Contractor agrees to require like compliance by all Subcontractors and suppliers.

45. LABOR STANDARDS

a. Work Hours:

In accordance with Labor Code §1810, eight (8) hours of labor shall constitute a legal day's work under this Contract. Contractor and any Subcontractor shall pay workers overtime pay as required by Labor Code §1815. The Contractor shall pay each worker, laborer, mechanic or persons performing work under this Contract at a rate not less than the prevailing wage for each craft or classification covering the work actually performed.

b. Penalty:

Contractor shall forfeit to District as a penalty the sum of twenty-five dollars (\$25.00) for each worker employed in the execution of this Contract by Contractor or any Subcontractor for each calendar day during which the worker is required or permitted to work more than eight (8) hours in any one (1) calendar day or more than forty (40) hours per calendar week in violation of Article 3, Division 2, Part 7, Chapter 1 of the California Labor Code.

c. Employment of Apprentices:

Contractor shall comply with Labor Code §§1773.3, 1777.5 and 1777.6, and 3077 *et. seq.*, each of which is incorporated by reference into this Contract. These sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one (1) hour of apprentice work for every five (5) hours of labor

performed by a journeyman, unless an exception is granted and that Contractors and Subcontractors shall not discriminate against otherwise qualified employees as apprentices on any public works solely on the ground of actual or perceived race, religion, color, national origin, ethnic group identification, sex, gender, sexual orientation, age, or physical or mental disability. Only apprentices who are in training under written apprenticeship occupations shall be employed. The responsibility for compliance with these provisions for all apprenticeable occupations rests with Contractor.

- d. The Contractor shall be knowledgeable of and comply with Labor Code §§1727, 1773.5, 1775, 1777, 1777.5, 1810, 1813, 1860, including all amendments thereto; each of these sections is incorporated by reference into this Contract.

46. GENERAL RATE OF PER DIEM WAGES

- a. On File:

As required by Labor Code §1773.2, the District has available copies of the general prevailing rate of per diem wages for workers employed on public work as determined by the Director of the Department of Industrial Relations, which shall be available to any interested party on request. Contractor shall post a copy of the document at each job site.

- b. Prevailing Wage Rate:

The Contractor and each Subcontractor shall pay each worker performing work under this Contract at a rate not less than the prevailing wage as defined in Labor Code §1771 and 1774 and §16000(a) of Title 8, California Code of Regulations.

- c. Penalty:

In accordance with §1775 of the Labor Code, the Contractor shall forfeit to the District as penalty, the sum of fifty dollars (\$50) for each calendar day, or portion thereof, for each worker paid less than the prevailing wage rates, as determined by the Director of the California Department of Industrial Relations, for any work done under this Contract by Contractor or by any Subcontractor. Contractor shall also pay each worker the difference between the stipulated prevailing wages rates and the amount actually paid to such worker.

47. RECORD KEEPING

- a. The Contractor agrees to comply with the provisions of §§1776 and 1812 of the Labor Code. The Contractor and each Subcontractor shall keep or cause to be kept an accurate record showing the names, addresses, social security numbers, work classifications, straight time and overtime hours worked each day and week of all workers employed by Contractor in connection with the execution of this Contract or any subcontract thereunder and showing the actual per diem wages paid to each of such workers. These records shall be certified and shall be open at all reasonable hours to the inspection of the District awarding the Contract, its officers and agents, and to the Chief of the Division of Labor Statistics and Law Enforcement of the State Department of Industrial Law Enforcement of the State Department of Industrial Relations, and his or her other deputies and agents.
- b. In addition, copies of the above records shall be available as follows:

- 1) A certified copy of an employee's payroll record shall be made available for inspection or furnished to the employee or his or her authorized representative on request;
 - 2) A certified copy of all payroll records shall be made available for inspection or furnished upon request to the District, the Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the Department of Industrial Relations;
 - 3) A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that a request by the public shall be made through either the District, the Division of Apprenticeship Standards, or the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. If the requested payroll records have not been previously provided, the requesting party shall, prior to being provided the records, reimburse the costs of the Contractor, Subcontractors, and the entity through which the request was made. The public shall not be given access to the records at the principal office of the Contractor.
- c. The Contractor shall file a certified copy of the records with the entity requesting the records within ten days after receipt of a written request. Any copy of records made available for inspection as copies and furnished upon request to the public or any public agency by the District, shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of the Contractor awarded the Contract or performing the Contract shall not be marked or obliterated.
 - d. The Contractor shall inform the Owner of the location of the records, including the street address, city and county, and shall, within five working days, provide a notice of a change of location and address.
 - e. In the event of noncompliance with the requirements of this section, the Contractor shall have ten days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this section. Should noncompliance still be evident after the ten day period, the Contractor shall, as a penalty to the District, forfeit twenty-five dollars (\$25) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, these penalties shall be withheld from progress payments then due.
 - f. Responsibility for compliance with this provision shall be with the Contractor.

48. PROJECT COMPLETION

- a. When all of the work to be performed under this Contract has been fully completed, the Contractor shall notify the Architect and District, in writing, setting a date for inspection. The Contractor and Subcontractor representatives shall attend the inspection. As a result of this inspection, the Architect will prepare a list of items ("punch list") that are incomplete or not installed according to the Contract Documents. Failure to include items on this list does not relieve the Contractor from fulfilling all requirements of the Contract Documents.
- b. The Architect will promptly deliver the punch list to the Contractor and it will include a period of time by which the Contractor shall complete all items listed thereon. On completion of all items on the punch list, verified by a final inspection, and all other Contract requirements, so that Final Completion has been achieved to the District's

satisfaction, the District will file a Notice of Completion with the County Recorder. Payment of retention from the Contract, less any sums withheld pursuant to the terms of this Contract or applicable law, shall not be made sooner than thirty-five (35) calendar days after the date of filing of Notice of Completion.

- c. District reserves the right to occupy buildings and/or portions of the site at any time before Completion, and occupancy shall not constitute final acceptance of any part of the Work covered by the Contract Documents, nor shall such occupancy extend the date specified for completion of the Work. Beneficial occupancy of building(s) does not commence any warranty period or entitle Contractor to any additional compensation due to such occupancy, or affect in any way or amount Contractor's obligation to pay liquidated damages for failure to complete the Project on time.

49. TRENCHING OR OTHER EXCAVATIONS

a. Excavations or Trenches Deeper than Four Feet:

If the Project involves digging trenches or other excavations that extend deeper than four feet, the following provisions shall be a part of this Contract:

- 1) The Contractor shall promptly, and before the following conditions are disturbed, provide written notice to the District if the Contractor finds any of the following conditions:
 - (a) Material that the Contractor believes may be a hazardous waste, as defined in §25117 of the Health and Safety Code, which is required to be removed to a Class I, Class II, or Class III disposal site in accordance with the provisions of existing law.
 - (b) Subsurface or latent physical conditions at the site which are different from those indicated or expected.
 - (c) Unknown physical conditions at the site of any unusual nature or which are materially different from those ordinarily encountered and generally recognized as inherent in work which the Contractor generally performs.
- 2) In the event that the Contractor notifies the District that Contractor has found any of the conditions specified in subparagraphs (a), (b) or (c), above, the District shall promptly investigate the condition(s). If the District finds that the conditions are materially different or that a hazardous waste is present at the site which will affect the Contractor's cost of, or the time required for, performance of the Contract, the District shall issue a change order in accordance with the procedures set forth in this Contract.
- 3) In the event that a dispute arises between the District and the Contractor regarding any of the matters specified in Paragraph (2), above, the Contractor shall proceed with all work to be performed under the Contract and the Contractor shall not be excused from completing the Project as provided in the Contract. In performing the work pursuant to this Paragraph, the Contractor retains all rights provided by Article 50 which pertains to the resolution of disputes between the contracting parties.

b. Regional Notification Center:

The Contractor, except in an emergency, shall contact the appropriate regional notification center at least two (2) days prior to commencing any excavation if the excavation will be conducted in an area that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the District, and obtain an inquiry identification number from that notification center. No excavation shall be commenced and/or carried out by the Contractor unless an inquiry identification number has been assigned to the Contractor or any Subcontractor and the Contractor has given the District the identification number. Any damages or delays arising from Contractor's failure to make appropriate notification shall be at the sole risk and expense of the Contractor and shall not be considered for an extension of the Contract time.

c. Existing Utility Lines:

- 1) Pursuant to Government Code §4215, the District assumes the responsibility for removal, relocation, and protection of main or trunk utility lines and facilities located on the construction site at the time of commencement of construction under this Contract with respect to any such utility facilities that are not identified in the plans and Specifications. Contractor shall not be assessed liquidated damages for delay in completion of the Project caused by the failure of the District or the owner of a utility to provide for removal or relocation of such utility facilities.
- 2) Locations of existing utilities provided by the District shall not be considered exact, but approximate within reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care nor costs of repair due to Contractor's failure to do so. The District shall compensate Contractor for the costs of locating and repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the plans and Specifications with reasonable accuracy.
- 3) No provision herein shall be construed to preclude assessment against Contractor for any other delays in completion of the Project. Nothing in this section shall be deemed to require the District to indicate the presence of existing service laterals, appurtenances, or other utility lines, with the exception of main or trunklines, whenever the presence of such utilities on the site of the construction Project can be inferred from the presence of other visible facilities, such as buildings, meter and junction boxes, on or adjacent to the site of the construction.
- 4) If Contractor, while performing work under this Contract, discovers utility facilities not identified by the District in the Project plans and Specifications, Contractor shall immediately notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

d. Prompt Notification:

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the conditions. Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to these provisions, shall constitute Contractor's waiver of any claim for damages incurred as a result of the conditions.

e. Trenches Five Feet and Deeper:

Pursuant to Labor Code §6705, if the Contract price exceeds \$25,000 and involves the excavation of any trench or trenches five (5) feet or more in depth, the Contractor shall, in advance of excavation, promptly submit to the District and/or a registered civil or structural engineer employed by the District or Architect, a detailed plan showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

50. RESOLUTION OF CONSTRUCTION CLAIMS

- a. Public work claims of \$375,000 or less between the Contractor and the District are subject to the provisions of Article 1.5 (commencing with §20104) of Chapter 1 of Part 2 of the Public Contract Code ("Article 1.5 claim"). For purposes of Article 1.5, "public work" has the same meaning as set forth in §§3100 and 3106 of the Civil Code; "claims" means a separate demand by Contractor for a time extension or payment of money or damages arising from work done by or on behalf of Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled to or the amount of the payment which is disputed by the District.
- b. All claims shall be submitted on or before the date of the Final Payment and shall include all documents necessary to substantiate the claim. District shall respond in writing within 45 days of receipt of claim if the claim is less than or equal to \$50,000 ("50,000 claim") or within 60 days if the claim is over \$50,000 but less than or equal to \$375,000 ("50,000 - \$375,000 claim"). In either case, District may request in writing within 30 days of receipt of claim any additional documentation supporting the claim or relating to any defenses to the claim which the District may have against the Contractor. Any additional information shall be requested and provided upon mutual agreement of the District and the Contractor. District's written response to the claim shall be submitted to Contractor within 15 days after receipt of the further documentation for \$50,000 claims or within 30 days after receipt of the further documentation for \$50,000 - \$375,000 claims or within a period of time no greater than that taken by the Contractor in producing the additional information, whichever is greater.
- c. Within 15 days of receipt of the District's response, if Contractor disputes the District's written response, or within 15 days of the District's failure to respond within the time prescribed, the Contractor shall provide written notification to District demanding an informal conference to meet and confer ("conference") to be scheduled by District within 30 days. Following the conference, if any claim or portion remains in dispute, the Contractor may file a claim as provided in Chapter 1 (commencing with §900) and Chapter 2 (commencing with §910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the period of time within which a claim must be filed is tolled from the time the claimant submits a written claim pursuant to this section until the time that claim is denied as a result of the conference process, including any period of time utilized by the meet and confer process.
- d. Pursuant to Public Contract Code §20104.2(f), this section does not apply to tort claims and does not change the period for filing claims or actions specified by Chapter 1 (commencing with §900) and Chapter 2 (commencing with §910) of Part 3 of Division 3.6 of Title 1 of the Government Code.
- e. If a civil action is filed, within 60 days, but no earlier than 30 days, following the filing of responsive pleadings, the court shall submit the matter to nonbinding mediation unless waived by mutual stipulation of both parties. The mediation process shall provide that both parties select a disinterested third person mediator within 15 days, shall be

commenced within 30 days of the submittal, and shall be concluded within 15 days of the commencement of the mediation unless time is extended upon a good cause showing to the court or by stipulation of the parties. If the parties fail to select a mediator within the 15-day period, any party may petition the court to appoint the mediator.

- f. If the matter remains in dispute, the case shall be submitted to judicial arbitration as set forth in Public Contract Code §§20104.4 (b)(1) through (b)(3).
- g. For any claim in excess of \$375,000, the Contractor and the District shall follow the same process as for an Article 1.5 claim. The District will forward a response within 60 days of submittal of any such claim. Judicial arbitration is not required for claims in excess of \$375,000.
- h. In addition, for all unresolved claims that the Contractor wishes to pursue, the Contractor shall file a timely claim pursuant to the Government Claims Act and shall otherwise comply with the procedures set forth in that Act prior to commencing any litigation against the District. The accrual date for any such claim is the date the dispute or controversy first arose regarding the issues raised in the claim.
- i. "The date of Final Payment," as used in this Article 50, means the date the public entity is required to release retention proceeds in accordance with Public Contract Code §7107 regardless of whether any payment is made to the Contractor at that time.
- j. The claims required by this Article are jurisdictional and conditions precedent to the commencement of any further legal proceedings. Strict compliance with all filing deadlines is mandatory.

51. DISABLED VETERANS PARTICIPATION GOALS *(Applies to K-12 districts only.)*

In accordance with Education Code §17076.11, this District has a participation goal for disabled veteran business enterprises ("DVBE") of at least 3 percent (3%) per year of the overall dollar amount of funds allocated to the District by the State Allocation Board pursuant to the Leroy F. Greene School Facilities Act of 1998 for construction or modernization and expended each year by the District. Prior to, and as a condition precedent for final payment under any contract for such project, the Contractor shall provide appropriate documentation to the District identifying the amount paid to DVBE in conjunction with the Contract, so that the District can assess its success at meeting this goal.

52. RETENTION OF DVBE RECORDS *(Applies to K-12 districts only.)*

The Contractor agrees that, for all contracts subject to DVBE participation goals, the State and the District have the right to review, obtain and copy all records pertaining to performance of the contract in accordance with DVBE requirements. The Contractor agrees to provide the State or the District with any relevant information requested and shall permit the State or District access to its premises upon reasonable notice for purposes of interviewing employees and inspecting records. The Contractor agrees to maintain such records for a period of three years after final payment under the Contract.

53. FINGERPRINTING

District Determination of Fingerprinting Requirement Application

The District has considered the totality of the circumstances concerning the Project and has determined that the Contractor and Contractor's employees (which includes Subcontractor employees):

 X are subject to the requirements of Education Code §45125.2 and Paragraph (a) below, is applicable.

 are not subject to the requirements of Education Code §45125.2, and Paragraph (b) below, is applicable.

- a. Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility Involving More than Limited Contact with Students (§45125.2)

By execution of the Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation, or repair of a school facility where the Contractor and/or Contractor's employees will have more than limited contact with students and the services to be provided do not constitute an emergency or exceptional situation. In accordance with Education Code §45125.2 the Contractor shall, at Contractor's own expense, (1) install a physical barrier to limit contact with students by Contractor and/or Contractor's employees, and/or (2) provide for the continuous supervision and monitoring of the Contractor and/or Contractor's employees by an employee of the Contractor who has received fingerprint clearance from the California Department of Justice, and/or (3) provide for the surveillance of the Contractor and Contractor's employees by a District employee.

- b. Contracts for Construction, Reconstruction, Rehabilitation or Repair of a School Facility Involving Only Limited Contact With Students (§45125.2)

By execution of the Contract, the Contractor acknowledges that Contractor is entering into a contract for the construction, reconstruction, rehabilitation or repair of a school facility involving only limited contact with students. Accordingly, the parties agree that the following conditions apply to any work performed by the Contractor and Contractor's employees on a school site: (1) Contractor and Contractor's employees shall check in with the school office each day immediately upon arriving at the school site; (2) Contractor and Contractor's employees shall inform school office staff of their proposed activities and location at the school site; (3) Once at such location, Contractor and Contractor's employees shall not change locations without contacting the school office; (4) Contractor and Contractor's employees shall not use student restroom facilities; and (5) If Contractor and/or Contractor's employees find themselves alone with a student, Contractor and Contractor's employees shall immediately contact the school office and request that a member of the school staff be assigned to the work location.

54. LABOR COMPLIANCE PROGRAM

The project is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In accordance with SB 854, all bidders, contractors and subcontractors working at the site shall be duly registered with the Department of Industrial Relations at time of bid opening and at all relevant times. Proof of registration shall be provided as to all such contractors prior to the commencement of any work. Contractor shall coordinate with the Architect to ensure that DIR is advised of the award of the construction contract in a timely manner by filing form PWC-100 with DIR within five days of award of the contract.

55. Blank.

56. DRUG-FREE WORKPLACE CERTIFICATION

Contractor certifies all of the following:

- 1) Contractor is aware of the provisions and requirements of California Government Code §§ 8350 et seq., the Drug Free Workplace Act of 1990.
- 2) Contractor is authorized to certify, and does certify, that a drug free workplace will be provided by doing all of the following:
 - a) Publishing a statement notifying all employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in Contractor's workplace and specifying actions which will be taken against employees for a violation of the prohibition;
 - b) Establishing a drug-free awareness program to inform employees about all of the following:
 - (i) The dangers of drug abuse in the workplace;
 - (ii) Contractor's policy of maintaining a drug-free workplace;
 - (iii) The availability of drug counseling, rehabilitation and employee-assistance programs; and
 - (iv) The penalties that may be imposed upon employees for drug abuse violations;
 - c) Requiring that each employee engaged in the performance of Work on the Project be given a copy of the statement required by subdivision (a), above, and that as a condition of employment by Contractor in connection with the Work on the Project, the employee agrees to abide by the terms of the statement.
- 3) Contractor understands that if the District determines that Contractor has either: (a) made a false certification herein, or (b) violated this certification by failing to carry out and to implement the requirements of Government Code §§ 8350 et seq., the Contract is subject to termination, suspension of payments, or both. Contractor further understands that, should Contractor violate the terms of the Drug-Free Workplace Act of 1990, Contractor may be subject to debarment in accordance with the provisions of Government Code §§ 8350, et seq.

57. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

Every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted, and this Contract shall be read and enforced as though it were included, and if through mistake or otherwise any provision is not inserted or is not correctly inserted, upon application of either party the Contract shall be amended to make the insertion or correction. All references to statutes and regulations shall include all amendments, replacements, and enactments on the subject which are in effect as of the date of this Contract.

58. GENERAL PROVISIONS

a. Assignment and Successors:

Neither party may transfer or assign its rights or obligations under the Contract Documents, in part or in whole, without the other party's prior written consent. The Contract Documents are binding on the heirs, successors, and permitted assigns of the parties hereto.

b. Third Party Beneficiaries:

There are no intended third party beneficiaries to the Contract.

c. Choice of Law and Venue

The Contract Documents shall be governed by California law, and venue shall be in the Superior Court of the county in which the project is located, and no other place.

d. Severability

If any provision of the Contract Documents is determined to be illegal, invalid, or unenforceable, in part or in whole, the remaining provisions, or portions of the Contract Documents shall remain in full force and effect.

e. Entire Agreement

The Contract Documents constitute the final, complete, and exclusive statement of the terms of the agreement between the parties regarding the subject matter of the Contract Documents and supersedes all prior written or oral understandings or agreements of the parties.

f. Waiver

No waiver of a breach, failure of any condition, or any right or remedy contained in or granted by the provisions of the Contract Documents shall be effective unless it is in writing and signed by the party waiving the breach, failure, right, or remedy. No waiver of any breach, failure, right, or remedy shall be deemed a waiver of any other breach, failure, right, or remedy, whether or not similar, nor shall any waiver constitute a continuing waiver unless the writing so specifies.

g. Headings

The headings in the Contract Documents are included for convenience only and shall neither affect the construction or interpretation of any provision in the Contract Documents nor affect any of the rights or obligations of the parties to the Contract.

PBK
Project No. 1725-05

Hidden Valley Elementary School Re-Roofing Package
Santa Rosa City Schools

--END--

SECTION 01 11 00

SUMMARY OF WORK

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SCOPE OF WORK

The Project, Hidden Valley Elementary School Re-Roofing Package

1. Hidden Valley Elementary School
3435 Bonita Vista Drive, Santa Rosa, California 95404

Base Proposal:

Steep Slope: Remove and properly dispose of existing roofing / insulation down to existing roof deck at roof areas A1-A6, A8, B1-B6, F1-F3, G1, G3, I1-I4 and K1. Repair/Prep existing roof deck per manufacture requirements. Install new 2x wood blocking and shim nailers around perimeter of roof edge to match new roof insulation composite board. Install full width roof of underlayment membrane at all perimeter edge, ridge, hips, valleys, raise walls to picture frame all roof planes. Install new 30# felt and Architectural dimensional shingles with associated roof related sheet metals, gutters, downspouts, and trim.

Remove and properly dispose of existing roofing / insulation down to existing roof deck at roof areas C1 and J1. Repair / prepare existing roof deck and loose lay new rosin paper (over wood roof deck areas) and 3" polyisocyanurate insulation. Install new 2x wood blocking and shim nailers around perimeter of roof edge to match new roof insulation and recovery board elevations. Mechanically attach new 1/4" recovery board secured to existing roof deck, ensure all fasteners are properly secured to the existing roof deck without penetrating through the underside of the roof deck. Install new specified modified bitumen base ply and title 24 modified bitumen finish ply membrane with associated roof related sheet metals, gutters, downspouts, and trim. Install new specified pipe supports for conduit and utility pipes with protection pads.

Clean and prep existing roof system at roof areas C2, and C3. Install new Title 24 restoration coating on metal roof panel system.

Exterior waterproofing:

Remove / grind clean all exterior building envelope sealant joints above and below all roof areas with scope of work indicated as part of these construction documents, around all existing window and door frames and wall penetrations. Prime and install new backer rod and sealant.

1.2 SALVAGED MATERIALS

- A. Owner may salvage all items deemed reusable or necessary to keep from facilities to be demolished prior to the start of demolition.
- B. Contractor shall remove and turn additional items over to the Owner, as directed.
- C. Contractor shall demolish, remove and salvage all other items of demolished work.

1.3 CONTRACTS AND USE OF SITE

- A. Contractor Use of Premises:
1. Confine operations at site to areas permitted by:
 - a. Law
 - b. Ordinances
 - c. Permits
 - d. Contract Documents
 2. Do not unreasonably encumber site with materials or equipment.
 3. Assume full responsibility for protection and safekeeping of products stored on premises.
 4. Obtain and pay for use of additional storage or work areas as needed for operations.
 5. Contractor shall establish secured staging area for work and coordinate and provide for safe passage and exit from building areas during construction, as determined by City and District officials.
 6. Contractor shall coordinate all construction activities with Owner.
 7. Owner reserves the right to perform construction operations with its own forces or to employ separate contractors on portions of the Project. Contractor shall coordinate with this work in terms of providing site access, work space, and storage space, cooperation of work forces, scheduling, and technical requirements.
 8. Coordinate all utility shutdowns with Owner and, as required, with local utility companies, prior to commencement of shutdown.
- B. Owner Occupancy:
1. Partial Owner Occupancy: The Owner reserves the right to place and install equipment in completed areas of the building, prior to Substantial Completion provided that such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
 2. A Certificate of Substantial Completion will be executed in accordance with conditions of the Contract.
 3. Contractor shall obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
 4. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.
 5. Prior to partial Owner occupancy, emergency and life safety systems shall be fully operational. Emergency and life safety systems include, but are not limited to, fire sprinkler systems, fire alarm systems, and emergency egress devices. For emergency exiting purposes, the path of travel shall be clearly delineated and functional. If required, temporary barricades shall separate on-going construction from occupied spaces as allowed by the governing agency holding jurisdiction over the Project. Required inspections and tests shall have been successfully completed. Upon occupancy the Owner will provide operation and maintenance of emergency and life safety systems in occupied portions of the building.
- C. Owner-Furnished Items:
1. The Owner may provide items to the Contractor for installation in accordance with manufacturer's recommendations and instructions.
 2. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
 3. If Owner-furnished items are damaged, defective or missing, through no fault of the Contractor, the Owner will arrange for replacement.
 4. The Contractor is responsible for designating the delivery dates of Owner-furnished items in the Contractor's Construction Schedule and for receiving, unloading and

handling Owner-furnished items at the site. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to elements, and to repair or replace items damaged as a result of his operations.

- D. Coordination with Owner's Forces or Owner's Contractors:
 - 1. Provide site access, space allocation, scheduling, scheduling coordination, coordination of work forces and coordination of technical requirements with contractors that may be selected and employed by Owner to perform work simultaneously and in conjunction with the Work, which may include, but shall not be limited to the following, as applicable to the Project:
 - a. Materials Inspection and Testing Agency
 - b. HVAC Testing, Adjusting, Balancing Agency
 - c. Energy Management System Contractor
 - d. Data and Cabling System Contractor
 - e. Telephone System Contractor
 - f. Modular Furniture Installer
 - g. Lighting and Sound
 - h. Surveying

1.4 PROTECTION OF EXISTING PROPERTY

- A. Contractor shall provide and maintain adequate protection of all Owner's existing property during duration of Project.
- B. Contractor shall verify location of all existing underground pipelines on site with the owner of such pipelines and authorities having jurisdiction and shall provide and maintain adequate protection of all such pipelines during duration of Project.
- C. Protection of Trees:
 - 1. Provide wood barricades around trees and shrubs at their drip line in traffic areas to protect them from construction operations until Substantial Completion, or until barricade removal is directed by Architect.

1.5 USE OF ASBESTOS FREE MATERIALS, PRODUCTS AND SYSTEMS

- A. The Contractor is reminded to refer to Document AB, Instructions to Offerors for requirements regarding asbestos containing materials (ACM).

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Refer to Specification Sections.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE

- A. The Owner has a critical need for the work to begin upon Notice to Proceed and shall have the entire work Substantially Complete by August 11, 2017.
- B. Refer to Section 01 32 16 for other scheduling requirements, and to Document CB - Supplementary Conditions for information concerning liquidated damages.

END OF SECTION

SECTION 01 21 00

ALLOWANCES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to the Section.

PART 1 - GENERAL

1.1 CONDITIONS

- A. Cash allowances are hereby established for Owner's Contingency, Scope of Work items and materials in the amounts listed below and shall be included in the Contract Sum. These sums shall be reconciled in accordance with Article 3.8 of the General Conditions.
- B. Allowances for materials, such as brick, tile, etc., shall be for the net cost of materials only, without sales tax, delivered and unloaded at the jobsite. The party who makes the purchase (Contractor or subcontractor) shall include handling costs on site, labor, overhead, profit and other expenses contemplated for each allowance in the Contractor's Sum and not in the allowance. Include labor under allowance, only when labor is specified to be included.
- C. Allowances for Scope of Work, such as Owner's contingency, graphics, technology, etc., will be adjusted, as necessary, to reflect the difference between the allowance amount stated and Contractor's handling costs, cost of materials, without sales tax, plus labor, subcontract costs, with overhead and profit markup, and any other reasonable costs, except the Contractor's overhead and profit, which is not allowed.
- D. Contractor shall cause the work covered by these allowances to be performed for such amounts and by such persons as the Architect may direct or by persons selected by competitive sealed proposals, but he will not be required to employ persons against whom he makes reasonable objection. If any items cost less than the amount listed, the Owner shall be given a credit in the amount of the difference. If the Owner so desires, credits in one allowance category may be transferred to any other allowance category. If any items cost more than the amount listed, such adjustment will include additional handling costs on the site, labor, installation costs, overhead, profit and other expenses resulting to the Contractor or subcontractor from any increase over the original allowance, unless such increase is funded by a transfer of funds from other allowances in which case no overhead and profit will be allowed. If the final cost of all allowances, when determined, is more or less than the sum of the allowances, the Contract Sum will be adjusted accordingly by Change Order.
- E. Contractor shall proceed with the work in question only after receiving written directions executed by the Owner and the Architect. Such direction will be provided by an Allowance Expenditure Authorization prepared by the Architect and executed by Owner, Architect and Contractor. Owner will not be obligated to pay the cost of any work completed without prior authorization.
- F. Unexpended balance of allowance sums shall revert to the Owner in the final settlement of the Contract.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 ALLOWANCES

- A. Owners Roofing Contingency Allowance: \$ 90,000.00
 - 1. Contractor shall include the amount indicated above in his Base Proposal as a contingency to cover the cost of hidden, concealed or otherwise unforeseen conditions which develop during completion of the work. Contractor shall be allowed to recover all costs associated with the completion of work under this contingency, however, no overhead or profit will be allowed.

- B. Unit Price Allowance: \$ 45,000.00
 - 1. Contractor shall include the amount indicated above in his Base Proposal as a contingency to cover the cost of hidden, concealed or otherwise unforeseen conditions which develop during completion of the work. Contractor shall be allowed to recover all costs associated with the completion of work under this contingency, however, no overhead or profit will be allowed.

END OF SECTION

SECTION 01 22 00

MEASUREMENT AND PAYMENT (UNIT PRICES)

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Measurement and payment criteria applicable to portions of the Work performed under a unit price payment method.
- B. Defect assessment and non-payment for rejected work.

1.2 AUTHORITY

- A. Measurement methods delineated in the individual specification sections complement the criteria of this Section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. The Architect will verify measurements and quantities.

1.3 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Contract Documents are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Architect determine payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted.

1.4 MEASUREMENT OF QUANTITIES

- A. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the applicable State Weights and Measures Department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - 3. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
- B. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- C. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- D. Measurement by Area: Measured by square dimension using mean length and width or radius.
- E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- F. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.5 PAYMENT

3.1 SCHEDULE OF UNIT PRICES (For adding or deducting units of work)

- A. Unit Price No. 1: Replacement of wood deck to match existing:
1. Unit Price shall be for entire unit cost including overhead and profit to provide replacement of wood deck and associated insulating fill to original depth which is not shown on the drawings, but which is found to be required.
 2. The units to be used shall be dollars per square foot.
 3. Enter unit price on Proposal Form.
- B. Unit Price No. 2: Replacement of wet insulating fill to original depth:
1. Unit Price shall be for entire unit cost including overhead and profit to provide replacement of metal deck and associated insulating fill to original depth which is not shown on the drawings, but which is found to be required.
 2. The units to be used shall be dollars per square foot.
 3. Enter unit price on Proposal Form.
- C. Unit Price No. 3: Removal and replacement of treated wood blocking: Unit Price shall be for entire unit cost including overhead and profit to provide removal and replacement of treated wood blocking which are not shown on the drawings, but which are found to be required.
- 2X4
2X6
2X8
1. The units to be used shall be dollars per linear foot for adding or deleting units of work to or from that required by the Base Proposal.
 2. Refer to Specification Sections for materials.
 3. Enter unit price on Proposal Form.

SECTION 01 25 13

PRODUCT SUBSTITUTION PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Specified product compliance, and product quality assurance
- B. Specific administrative and procedural requirements for handling requests for substitutions made prior to award of Contract.
- C. Requirements for product delivery, storage and handling.

1.2 RELATED REQUIREMENTS

- A. Instructions to Offerors: Product options and procedures for submittal of requests for substitutions during the Proposal period.

1.3 DESCRIPTION OF REQUIREMENTS

- A. Definitions: Definitions used in this Section are not intended to negate the meaning of other terms used in the Contract Documents, including such terms as "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction", and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.
 - 1. Products: Shall mean items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" as used herein includes the terms "material", "equipment", "system", and other terms of similar intent.
 - a. Named Products: Are those identified by the use of the manufacturer's name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
 - b. Specified Products: same as Named Products.
 - 2. Materials: Shall mean products that must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, or installed to form units of work.
 - 3. Equipment: Is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that requires service connections such as wiring or piping.

1.4 PRODUCT QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
 - 1. When it is discovered that specific products are available only from sources that do not or cannot produce an adequate quantity to complete project requirements in a timely manner, consult with the Architect/Engineer for a determination of what product quantities are most important before proceeding. The Architect/Engineer will designate those qualities, such as visual, structural, durability, or compatibility, that are most important. When the

PRODUCT SUBSTITUTION PROCEDURES

Architect/Engineer's determination has been made, select products from those sources that produce products that possess the most important qualities, to the fullest extent possible.

- B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two (2) or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor.
- C. Or Equal:
 - 1. Where the phrase "or equal", "or equivalent", "or Architects approved equal", or similar phrasing, occurs in the Proposal Documents, do not assume that materials, equipment, or methods of construction will be approved by the Architect unless the item has been specifically approved for this Work by the Architect.
 - 2. The decision of the Architect shall be final.
- D. Where a proposed substitution involves the work of more than one (1) contractor, each contractor involved shall cooperate and coordinate the work with each other contractor involved, so as to provide uniformity and consistency and to assure the compatibility of products.
- E. Foreign Product Limitations: "Foreign products" as distinguished from "domestic products" are defined as products that are either manufactured substantially (50 percent or more of value) outside of the United States and its possessions, or produced or supplied by entities known to be substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.
 - 1. Except under one (1) of the following conditions, select and provide domestic, not foreign, products for inclusion in the Work.
 - a. There is no domestic product available that complies with the requirements of the Contract Documents.
 - b. Available domestic products that comply with the requirements of the Contract Documents are available only at prices or other procurement terms that are substantially higher (25 percent or more) than for available foreign products that comply with the requirements of the Contract Documents.
 - c. At the discretion of the Architect or Owner.
 - 2. Final determination and acceptance will be the responsibility of the Architect.
- F. Standards: Refer to Section 01 41 00, Regulatory Requirements for the applicability of industry standards to the products specified for the Project, and for the acronyms used in the text of the Specification Sections.

1.5 SUBSTITUTIONS OF PRODUCTS

- A. The products described in the Proposal Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. The materials and equipment named in, and the procedures covered by these specifications have been selected as a standard because of quality, particular suitability or record of satisfactory performance. It is not intended to preclude the use of equal or better materials or equipment provided that same meets the requirements of the particular project and is approved in an Addendum as a substitution prior to the submission of proposals.

PRODUCT SUBSTITUTION PROCEDURES

- B. No substitution will be considered prior to receipt of proposals unless written request for approval has been received by the Architect at least seven (7) days prior to the date for receipt of proposals. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
- C. If the Architect approves any proposed substitution prior to receipt of proposals, such approval will be set forth in an Addendum. Offerors shall not rely upon approvals made in any other manner.
- D. The Architect and Owner reserve the right to disapprove the use of any manufacturer who in their judgment is unsuitable for use on the Project and that decision will be final
- E. The following are not considered as substitutions:
 - 1. Revisions to the Contract Documents, when requested by the Owner, Architect, or any of their consultants are considered as "changes" not substitutions.
 - 2. Specified Contractor options on products and construction methods included in Contract Documents are choices made available to the Contractor and are not subject to the requirements specified in this Section for substitutions.
 - 3. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.
- F. The following may be considered as a reason for a request for substitution:
 - 1. The request is directly related to an "or approved equal" clause or similar language in the Contract Documents.
 - 2. The specified product or method of construction cannot be provided within the Contract Time in accordance with paragraph below concerning availability of specified items.
 - 3. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 - 4. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other consideration of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Architect/Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
 - 5. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 - 6. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
 - 7. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- G. Availability of specified items:
 - 1. Verify prior to submittal of Proposal that all specified items will be available in time for installation during orderly and timely progress of the work.

PRODUCT SUBSTITUTION PROCEDURES

2. In the event specified items will not be so available, notify the Architect prior to receipt of Proposals. Submit Request for Substitutions in accordance with this section.
 3. The request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or coordinate activities properly.
 4. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will be back-charged as necessary and shall not be borne by the Owner.
- H. A request constitutes a representation that Offeror:
1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
 2. Will provide same warranty for Substitution as for specified product, except when inability to provide specified Warranty is reason for request for substitution as described above.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse the Owner and pay for all costs, including Architect/Engineer's redesign and evaluation costs resulting from the use of the proposed substitution, or for review or redesign services associated with re-approval by authorities having jurisdiction.
- I. **No substitutions will be considered after the Award of Contract.**

1.6 SUBSTITUTION REQUEST SUBMITTAL

- A. Requests for Substitutions: Submit three (3) copies of each request for substitution. In each request identify the product or fabrication or installation method to be replaced by the substitution; include related Specifications Section and Drawing numbers, and complete documentation showing compliance with the requirements for substitutions. Include, as appropriate, with each request, the following information:
1. Product data, drawings and descriptions of products, fabrication and installation procedures.
 2. Samples, where applicable or requested.
 3. A detailed comparison of the significant qualities of the proposed substitution with those of the work originally specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect, where applicable.
 4. Coordination information, including a list of changes or modifications needed by other parts of the work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
 5. A statement indicating the effect the substitution will have on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 6. Cost information, including a proposal of the net change, if any in the Contract Sum.
 7. Certification by the Contractor to the effect that, in the Contractor's opinion, after thorough evaluation, the proposed substitution will result in work that in every significant respect is equal-to or better than the work required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may

PRODUCT SUBSTITUTION PROCEDURES

subsequently become necessary because of the failure of the substitution to perform adequately.

8. A statement indicating the Contractor will reimburse the Owner and pay for all costs, including Architect/Engineer's re-design and evaluation costs resulting from the use of the proposed substitution.

- B. Work-Related Submittals: The Contractor's submittal of, and the Architect/Engineer's acceptance of, Shop Drawings, Product Data, or Samples which are related to work not complying with the Contract Documents, does not constitute an acceptance or valid request for a substitution, nor approval thereof.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. General: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control to prevent overcrowding of construction spaces or overloading of structure. In particular, coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
 1. Deliver products to the site in the manufacturer's sealed containers or other packaging system, complete with labels intact, and instructions for handling, storage, unpacking, installing, cleaning and protecting.
 2. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation or potential degradation of product.
 3. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
 4. Store products at the site or in a bonded and insured off-site storage facility or warehouse in a manner that will facilitate inspection and measurement of quantity or counting of units. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.
 5. Store heavy materials away from the project structure or in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT COMPLIANCE

- A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a contract requirement. These requirements may be specified in any one (1) of several different specifying methods, or in any combination of these methods. These methods include the following:
 1. Proprietary
 2. Descriptive
 3. Performance
 4. Compliance with Reference Standards

Compliance with codes, compliance with graphic details, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.

- B. Procedures for Selecting Products: The Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Required procedures include, but are not limited to the following for the various indicated methods of specifying:
 1. Proprietary and Semi-Proprietary Specification Requirements:

- a. Single Product Name: Where only a single product or manufacturer is named, provide the product indicated, unless the specification indicates the possible consideration of other products. Advise the Architect/Engineer before proceeding, when it is discovered that the named product is not a reasonable or feasible solution.
 - b. Two (2) or More Product Names: Where two (2) or more products or manufacturers are named, provide one (1) of the products named, at the Contractor's option. Exclude products that do not comply with specification requirements. Do not provide or offer to provide an unnamed product, unless the specification indicates the possible consideration of other products. Advise the Architect/Engineer before proceeding where none of the named products comply with specification requirements, or are not feasible for use. Where products or manufacturers are specified by name, accompanied by the term "or approved equal" or similar language, comply with this Section regarding "substitutions" to obtain approval from the Architect/Engineer for the use of an unnamed product.
2. Non-Proprietary Specification Requirements: Where the specifications name products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to the use of these products only, the Contractor may, at his option, use any available product that complies with the Contract requirements.
3. Descriptive Specification Requirements: Where the specifications describe a product or assembly generically, in detail, listing the exact characteristics required, but without use of a brand name, provide products or assemblies that provide the characteristics indicated and otherwise comply with Contract requirements.
4. Performance Specification Requirements: Where the specifications require compliance with indicated performance requirements, provide products that comply with the specific performance requirements indicated, and that are recommended by the manufacturer for the application indicated. The manufacturer's recommendations may be contained in published product literature, or by the manufacturer's individual certification of performance. General overall performance of a product is implied where the product is specified for specific performances.
5. Compliance with Standards, Codes, and Regulations: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting a product that complies with specification requirements, including standards, codes, and regulations.
6. Visual Matching: Where matching an established sample is required, the final judgement of whether a product proposed by the Contractor matches the sample satisfactorily will be determined by the Architect. Where there is no product available within the specified product category that matches the sample satisfactorily and also complies with other specified requirements, comply with the provisions of this Section regarding "substitutions" and other Contract Documents for "change orders" for the selection of a matching product in another product category, or for non-compliance with specified requirements.
7. Visual Selection: Except as otherwise indicated, where specified product requirements include the phrase "...as selected from the manufacturer's standard colors, patterns, textures..." or similar phrases, the Contractor has the option of selecting the product and manufacturer, provided the selection complies with other specified requirements. The Architect is subsequently responsible for selecting the color, pattern and texture from the product line selected by the Contractor.
8. Allowances: Refer to individual sections of the specifications and Section 01 21 00, Allowances for an indication of product selections that are controlled by

PRODUCT SUBSTITUTION PROCEDURES

established allowances, and for the procedures required for processing such selections.

- C. Producer's Statement of Applicability: Where individual specification sections indicate products that require a "Statement of Applicability" from the manufacturer or other producer, submit a written-certified statement from the producer stating that the producer has reviewed the proposed application of the product on the project. This statement shall state that the producer agrees with or does not object to the Architect/Engineer's specification and the Contractor's selection of the product on the project is suitable and proper.

2.2 SUBSTITUTIONS

- A. Condition: The Contractor's request for substitution will be received and considered when extensive revisions to Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the request is timely, fully documented and properly submitted, and when one (1) or more of the above conditions are satisfied, all as judged and determined by the Architect/Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. General: Except as otherwise indicated in individual sections of these specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated.
- B. Anchor each product securely in place, accurately located and aligned with other work.
- C. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.
- D. Products and assemblies shall be installed complete, in-place, watertight and structurally sound.

3.2 INSTALLATION OF APPROVED SUBSTITUTIONS

- A. Coordinate all approved substitutions with adjacent work.
- B. Comply with the manufacturer's and/or supplier's instructions and recommendations for installation of the products in the applications indicated.
- C. Provide all items required by manufacturer and/or supplier regarding installation, i.e. supplemental supports, anchors, fasteners, painting, etc. whether or not indicated or specified.

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Change procedures.
- B. Defect assessment.

1.2 GENERAL

- A. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning change procedures.

1.3 CHANGE PROCEDURES

- A. Submittals: Submit name of individual authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
- B. Minor Changes: The Architect/Engineer may advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on Minor Change form or by other similar documents in the form issued by the Architect.
- C. Change Proposal Request: The Architect may issue a Change Proposal Request (CPR) or other similar request for proposal in the form issued by the Architect, including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change and the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate in the form of a Change Proposal so as to not cause delays in the Project.
- D. Use of allowances must be approved by issuance of Allowance Expenditure Authorization (AEA) by Architect prior to modification of the schedule of values. The AEA may be comprised of a single executed Change Proposal, an accumulation of executed Change Proposals, or other similar documentation in the form allowed by the Architect in accordance with Document CB, Supplementary Conditions of the Contract.
- E. Contractor may propose changes which, in his opinion, will provide value to the Owner, by submitting a request for change to Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on Work by separate or other Contractors. If accepted by Architect and approved by Owner, submit a Change Order in accordance with the requirements of this Section. This request will not be considered a substitution except as defined by Section 01 25 13, Product Substitution Procedures. Owner is not obligated to accept this request.
- F. Construction Change Directive: Architect/Engineer may issue directive, on AIA Form G713 Construction Change Directive or other similar document in the form issued by the Architect, and signed by Owner, instructing Contractor to proceed with change in the

CONTRACT MODIFICATION PROCEDURES

Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

- G. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.
- H. Change Order Forms: AIA G701 - Change Order.
- I. Execution of Change Orders: The Architect will prepare and sign the Change Order, the contractor shall sign the Change Order indicating acceptance of the change, and then the Owner will execute the Change Order.
- J. Correlation Of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 - 3. Promptly enter changes in Project Record Documents.

1.4 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements at no additional cost to the Owner.
- B. If, in the opinion of the Architect/Engineer or Owner, it is not practical to remove and replace the Work, the Architect will direct appropriate remedy or adjust payment.
- C. The defective Work may remain, but sum/price will be adjusted to new sum/price at the discretion of Architect or Owner.
- D. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.
- E. Authority of Architect/Engineer, or other appropriate agent identified to perform assessment by the Architect/Engineer or Owner, to assess defects and identify payment adjustments, is final.
- F. Non-Payment For Rejected Products: In addition to replacement of rejected Work, payment will not be made for rejected products for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from transporting vehicle.
 - 4. Products placed beyond lines and levels of required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected products.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 29 00

PAYMENT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Procedures for submitting Applications for Payment.

1.2 GENERAL

- A. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning payment procedures.

1.3 SCHEDULE OF VALUES

- A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702 in accordance with Section 01 29 73, Schedule of Values. Contractor's standard form or electronic media printout will be considered but must be approved by the Owner.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit four (3) notarized originals of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702 or other similar form approved by the Owner.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Submit updated construction schedule with each Application for Payment.
- D. Payment Period: Submit at intervals stipulated in the Agreement in accordance with Document CB, Supplementary Conditions of the Contract.
- E. Only materials stored on the project site shall be paid for unless the materials are stored in a bonded warehouse.
- F. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Items which may be requested by the Architect or Owner to substantiate costs include, but are not limited to the following:
 - 1. Current Record Documents as specified in Section 01 77 00, Closeout Procedures, for review by Owner which will be returned to Contractor.
 - 2. Labor time sheets, purchase orders, or similar documentation.
 - 3. Affidavits attesting to off-site stored products.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

PAYMENT PROCEDURES

01 29 00 - 1

SECTION 01 29 73

SCHEDULE OF VALUES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the work, as specified herein and in other provisions of the Contract Documents.
- B. Coordinate requirements of this Section with the requirements of the General and Supplementary Conditions of the Contract concerning Schedule of Values.

1.2 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Owner, provide copies of the subcontracts or other data acceptable to the Owner, substantiating the sums described.

1.3 SUBMITTALS

- A. Prior to the first Application for Payment, submit a proposed schedule of values to the Owner, as outlined below:
 - 1. Meet with the Owner and determine additional data, if any, required to be submitted.
 - 2. Secure the Owner's approval of the schedule of values prior to submitting first Application for Payment.

1.4 SCHEDULE OF VALUES

- A. The Schedule of Values shall be broken down into item costs for each specification section as a minimum. After review by the Owner, the Schedule of Values shall be broken down into further items as required. (See following list and refer to the enclosed sample.). In addition, total each Specification Division separately.
- B. Schedule of Values - Items in addition to Specification Sections.
 - 1. Mobilization
 - 2. Clean Up
 - 3. Building Permit
 - 4. Bonds, Insurance
 - 5. Misc. Mechanical Accessories
 - 6. Demolition
 - 7. Rough-In Labor - (Roofing Tear off)
 - 8. Rough-In Material - (Roofing Tear off)
 - 9. Finish Labor - (Roofing cap ply)
 - 10. Finish Material - (Roofing cap ply)
 - 11. Allowances (listed separately)
 - 12. Record drawings and close-out documents
 - 13. Submittals listed separately per mechanical, electrical and plumbing
 - 14. Roof warranty as a line item
 - 15. Donated items individually itemized at \$0.00 (zero dollars).

SCHEDULE OF VALUES

01 29 73 - 1

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 SCHEDULE OF VALUES

A. Refer to following sample.

END OF SECTION

SECTION 01 31 13

PROJECT COORDINATION

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS

- A. General: notify the Architect whenever there is need of clarification or interpretation of the Contract Documents prior to commencement of work.
- B. Commencement of work without Architect's prior notification means Contractor's acceptance of responsibility.
- C. Commencement of work without Architect's prior notification implies Contractor's understanding of conditions, assemblies, methods, or procedures.
- D. The project superintendent shall notify the Owner on an ongoing basis of ongoing work.

1.2 PRE-INSTALLATION CONFERENCE

- A. General: Notify the Architect 72 hours in advance of certain stages of construction, and, as required by the Architect, organize a pre-installation meeting with each trade individually prior to commencement of their portion of the Work. At a minimum, representatives of the Architect, the General Contractor's project superintendent, and the Sub-contractor's Foreman and Project Manager shall be present at each meeting. The Engineer shall be notified as applicable.
- B. As indicated in each specific section of this Project Manual, or as required by the Architect, these stages generally include, but are not necessarily limited to the following:
 - 1. Division 6 – Rough Carpentry
 - 2. Division 7 - installation of waterproofing, vapor barriers, flashing and sheet metal.
- C. In addition to notifying the Architect, notify the Structural Engineer (48 hours) prior to the following stages:
 - 1. Erecting structural steel elements.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

- A. The Contractor shall contact Architect at least ten (10) days prior to commencing construction in order for Architect to schedule a pre-construction meeting with Contractor, Architect, and Owner. This meeting must occur prior to commencement of any construction.

3.2 CONFERENCES AND MEETINGS

- A. Refer to Section 01 31 19, Project Meetings for requirements pertaining to Pre-construction Conference, Progress Meetings, and Pre-installation Conferences.

END OF SECTION

PROJECT COORDINATION

01 31 13 - 1

SECTION 01 31 19

PROJECT MEETINGS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDE

- A. The Architect's:
 - 1. Scheduling of each meeting (pre-construction meeting, periodic project meetings, and specialty called meetings throughout the progress of the Work).
 - 2. Preparation of agenda for meetings.
 - 3. Presiding at minutes, including all significant proceedings and decisions.
 - 4. Recording, reproducing, and distributing copies of meeting minutes within two (2) working days, excluding weekends and holidays, after each meeting to:
 - a. All participants in the meeting.
 - b. All parties affected by decisions made at the meeting.
 - 5. Providing status report of allowance funds.
- B. The Contractor's:
 - 1. Making physical arrangement for meetings.
 - 2. Participation in all meetings and conferences.
 - 3. Scheduling attendance of Job Superintendent, Project Coordinator, and other parties affecting or affected by decisions made at meetings and conferences as their interests require.
 - 4. Scheduling Pre-installation conferences.
 - 5. Scheduling Pre-Closeout Meeting
 - 6. Providing updated schedules.
 - 7. Providing status reports/logs of CPRs, MCs, and shop drawings/submittals.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

- A. Contractor shall contact Architect at least ten (10) days prior to commencing construction in order for Architect to schedule a pre-construction meeting with Contractor, Architect, and Owner. This meeting must occur prior to commencement of any construction.
- B. Architect will:
 - 1. Administer pre-construction conference for the establishment of communication methods, procedures and Owner requirements.
 - 2. Administer site mobilization conference for clarification of Owner and Contractor.
- C. Location: At Project site as designated by the Architect.
- D. Attendance:
 - 1. Contractor or Contractor's Representative
 - 2. Job Superintendent
 - 3. Project Coordinator (Manager)
 - 4. Owner or Owner's Representative

5. Major subcontractors
 6. Major suppliers
 7. Architect's Representative
 8. Architect's Field Representative
 9. Consultants as needed
 10. Others as appropriate
- E. Meeting Agenda, may include, but is not limited to:
1. Discussion on major subcontracts and suppliers and projected construction schedules.
 2. Critical work sequencing.
 3. Major equipment deliveries and priorities. Discussion of long lead time items.
 4. Project coordination and designation of responsible personnel.
 5. Procedures and processing of field decisions, proposal requests, submittals, minor changes, change orders and applications for payment.
 6. Method of distribution of Contract Documents.
 7. Procedures for maintaining Record Documents.
 8. Use of premises, office work and storage areas, on-site parking, and Owner's requirements.
 9. Construction facilities and temporary utilities.
 10. Housekeeping procedures.

3.2 PROGRESS MEETINGS

- A. Architect will:
1. Schedule project meetings throughout progress of the work at weekly intervals, and specially called meetings.
 2. Set agenda and administer said meetings.
 3. Preside at meetings.
 4. Record meeting minutes, including all significant proceedings and decisions.
 5. Reproduce and distribute copies of meeting minutes within two (2) working days, excluding weekends and holidays, after each meeting to:
 - a. All participants in the meeting.
 - b. All parties affected by decisions made at the meeting.
- B. Contractor shall:
1. Make physical arrangements for meetings.
- C. Attendance:
1. Contractor or Contractor's Representative
 2. Job Superintendent
 3. Project Coordinator (Manager)
 4. Owner or Owner's Representative
 5. Major subcontractors
 6. Major suppliers
 7. Architect's Field Representative
 8. Consultants as needed
 9. Others as appropriate
- D. Meeting Agenda, may include, but is not limited to:
1. Review and approval of minutes of previous meeting.
 2. Review of Work progress since previous meeting.
 3. Field observations, problems, and conflicts.
 4. Review of off-site fabrication and delivery schedules.
 5. Corrective measures and procedures to regain projected schedule.
 6. Revisions to Construction Schedule.

7. Plan progress and schedule during succeeding work period.
8. Coordination of schedules.
9. Review submittal schedules and expedite as required.
10. Maintenance of quality standards.
11. Allowance balances.
12. Review of proposed changes and substitutions for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the Project.
13. Status of Allowance Expenditure Authorizations (AEAs).
14. Status of Change Proposal Requests (CPRs).
15. Status of Minor Changes (MCs).
16. Status of submittals, review of submittal log.
17. Other items and critical issues affecting Work.

3.3 PRE-INSTALLATION CONFERENCES

- A. In accordance with the requirements of Section 01 11 00, Notification of Architect Requirements, the Contractor will convene pre-installation conferences when required by individual specification Sections or as required by the Architect, prior to the Contractor commencing Work of the Section.
- B. Attendance, optional:
 1. General Contractor or Contractor's Representative
 2. Project Coordinator (Manager)
 3. Owner or Owner's Representative
 4. Architect's Project Manager (Project Executive)
- C. Attendance, required:
 1. Project Superintendent
 2. Architect's Field Representative
 3. Sub-contractor's Project Manager
 4. Sub-contractor's Foreman
 5. Engineer's Representative, as needed.
 6. Manufacturer's Representative, as needed.
 7. Governing Agency Official, as required
 8. Inspection Agency Representative, as required.
 9. Others affecting or affected by Work.
- D. Meeting Agenda, may include, but is not limited to:
 1. Review of conditions of installation.
 2. Preparation and installation procedures.
 3. Coordination with related work
 4. Review of the contract document requirements.
 5. Review of code enforcement or testing requirements.
 6. Questions related to work required.

3.4 PRE-CLOSEOUT MEETING

- A. In accordance with the requirements of Section 01 77 00, Closeout Procedures, the Contractor will convene a pre-closeout meeting when he considers the Work or designated portion of the Work is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the work for its intended use.
- B. Attendance, required:
 1. Owner or Owner's Representative
 2. Project Coordinator (Manager)

3. General Contractor or Contractor's Representative
 4. Project Superintendent
 5. Architect's Project Manager (Project Executive)
 6. Architect's Field Representative
 7. Engineer's Representative, as needed.
- C. Meeting Agenda, may include, but is not limited to:
1. Review of the contract document requirements for Substantial Completion and Project Closeout
 2. Review of Work which remains to be completed or corrected.
 3. Closeout Document review schedule and log
 4. Review of closeout procedures including, but not limited to Record Drawings, Warrantees, Operation and Maintenance Manuals, and Owner Demonstrations and Start-up.
 5. Review of code enforcement or testing requirements.
 6. Questions related to work required.

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 GENERAL

1.1 SUBMITTALS

- A. Schedules:
 - 1. Preliminary Analysis: Within 10 (ten) days after receipt of Award of Contract, submit a preliminary construction schedule for review by Owner and Architect.
 - 2. Construction Schedule: Within 14 (fourteen) days after receipt of Notice to Proceed, submit one (1) reproducible and four (4) prints of the approved construction schedule.

1.2 RELIANCE UPON SCHEDULE

- A. The construction schedule as approved by the Architect will be an integral part of the contract and will establish conditions for various activities and phases of constructions.

1.3 CONSTRUCTION SCHEDULE

- A. Diagram: Graphically show the order of all activities necessary to complete the work and the sequence in which each activity is to be accomplished.
- B. Activities shown on the diagram shall include but not necessarily be limited to:
 - 1. Project mobilization
 - 2. Submittals and approvals of shop drawings and samples
 - 3. Phasing of construction
 - 4. Procurement of equipment and critical materials
 - 5. Fabrication and installation of special material and equipment
 - 6. Final clean-up
 - 7. Final inspection and testing
- C. The construction schedule shall be updated and submitted with each Application for Payment.

1.4 CONSTRUCTION SCHEDULE LIMITATIONS

- A. Work performed under this Contract shall be done in accordance with the following paragraphs:
 - 1. All work may proceed immediately upon Notice to Proceed and continue uninterrupted.
 - 2. The Owner has a critical need for the work to begin upon Notice to Proceed and shall be Substantially Complete by August 21, 2016.
 - 3. Under the Base Proposal only, the successful Offeror will be 1) entitled to certain extensions of time and 2) subject to liquidated damages for work not completed beyond the agreed date which the Contractor shall require for Substantial Completion of the work included in this contract. Refer to Supplementary Conditions for additional requirements and liquidated damages.
 - 4. Failure to complete and close-out project after substantial completion may result in liquidated damages. Refer to Supplementary Conditions for additional requirements and liquidated damages.

5. The Owner may at his discretion approve changes recommended by the successful Offeror to the above-mentioned schedule provided that the Owner's use of newly completed areas are not disrupted.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SUBMITTAL PROCEDURES

- A. Transmit to the Architect/Engineer each item indicated in individual specification sections with approved form identifying:
 - 1. Date of submission and dates of any previous submissions.
 - 2. Project title and number
 - 3. Contract identification
 - 4. Names of Contractor, Supplier, Manufacturer
 - 5. Pertinent drawing sheet and detail number, and specification section number, as appropriate
 - 6. Deviations from Contract Documents.
- B. Contractor shall be responsible for initial review prior to submittal to Architect/Engineer to verify adequacy and conformance to contract requirements. Lack of review by Contractor may be grounds for rejection.
- C. Apply Contractor's stamp, signed, to each item submitted, certifying that review and verification of products, field dimensions, adjacent construction work and coordination of information is in accordance with the requirements of the work and contract documents.
- D. Transmit each item in accordance with approved schedule, and in such sequence as to cause no delay in the work or in the work of any other Contractor. Allow minimum of ten (10) days for adequate Architect/Engineer review of each submittal. Time may vary according to scope and complexity of item under review. Allow adequate time in schedule for revisions and resubmittal as deemed necessary.
- E. Submit one (1) opaque print or copy of the submittal to the Architect plus one (1) electronic original. Transmit the printed copy of consultant and engineering submittals directly to respective consultants with a transmittal and the electronic original to the Architect. The Architect and Consultant will make up the printed copy and return to the Contractor upon completion of review. It will be the Contractors responsibility to scan and distribute the necessary quantity of copies of the reviewed submittal to all concerned parties.
- F. Submit each item according to individual specification sections and identified by Division, Section, and individual submittal number. Maintain log according to each Division.
- G. Revise and resubmit submittal as required; identify all changes made since previous submittal.
 - 1. Make any corrections or changes in the submittals required by the Architect/Engineer and resubmit until approved.
 - 2. Submit new submittal as required for initial submittal.

1.2 PROPOSED PRODUCTS LIST

- A. Within 30 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.3 PRODUCT DATA

- A. Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Submit the number of copies of product data and samples which the Contractor and his subcontractors need for their use PLUS two (2) additional sets for the Architect, one (1) additional set for the Owner and one (1) additional set for each of the Architect's consultants involved with the particular Section of Work.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project

1.4 MSDS SHEETS

- A. Pursuant to the above referenced Rules, submit MSDS Sheets showing that materials used in the Project, contain 1.0 percent or less asbestos. This requirement pertains to every material in every Section of the Specifications, as applicable to the Project, whether written therein, or not. Submit MSDS Sheets for materials, as applicable to the Project.

1.5 SHOP DRAWINGS

- A. Submit to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. All dimensions indicated on the drawings are based on the specific models and manufacturers of products, equipment, fixtures and miscellaneous items specified. If the Contractor uses an approved product by another listed manufacturer which is different than the specific model and manufacturer listed in these specifications, then the Contractor shall be solely responsible for the coordination of any dimensional changes required, including structural, relocation of walls, equipment, fixtures, ceilings and miscellaneous items. When dimensional changes are required in these situations, the Contractor shall submit a proposed modification drawing to the Architect for approval prior to proceeding with the work. All causes and effects of the dimensional change shall be indicated on the Contractor's drawing submittal.

1.6 SAMPLES

- A. Submit for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
- B. Submit for aesthetic, color, or finish selection. Submit full range of manufacture's standard colors, textures, and patterns for Architect's selection.
- C. Submit samples to illustrate functional characteristics of the Product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- D. Submit the number specified in respective Specification Section; minimum of two (2), of which one (1) will be retained by Architect.

- E. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- F. Samples will not be used for testing purposes unless specifically stated in specification section.

1.7 DESIGN DATA

- A. When required, submit for Architect/Engineer's knowledge as contract administrator or for Owner.
- B. Submit design data for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.8 TEST REPORTS

- A. In accordance with Section 01 45 23, Inspection and Testing Laboratory Services, submit test reports for Architect/Engineer's knowledge as contract administrator or for Owner. Architect will determine whether corrective action is required.
- B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect, in quantities specified.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and Owner.
- D. Submit required certificates in duplicate.

1.10 GUARANTEES

- A. When specified in individual specification sections, submit warranties by manufacturer, installation/application subcontractor, fabricator, or Contractor to Architect, in quantities specified.
- B. Submit warranties in accordance with Section 01 77 00, Closeout Procedures.

1.11 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Architect for delivery to Owner in quantities specified.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Submit required instructions in duplicate.

1.12 MANUFACTURER'S FIELD REPORTS

- A. Submit reports for Architect/Engineer's benefit as contract administrator or for Owner.
- B. Submit report in quantity specified or required within ten (10) days of observation to Architect for information. Architect will determine whether corrective action is required.
- C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 ERECTION DRAWINGS

- A. When required, submit drawings for Architect/Engineer's benefit or for Owner.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.
- C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect/Engineer or Owner. Architect will determine whether corrective action is required.

1.14 CONSTRUCTION PHOTOGRAPHS

- A. Provide photographs monthly of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect/Engineer.
- B. Photographs: digital; sent to Architect via email, or provide on non-rewritable compact disk. Along with Application for Payment, include one (1) reproducible copy of contact sheet of all photographs taken during that period indicating Work completed and identified as stated below.
- C. Photograph project conditions five (5) days maximum prior to submitting indicating relative progress of the Work. Do not photograph conditions previously photographed if no work has proceeded. As able, take photographs from same position indicating same view in successive installments.
- D. Take photographs as evidence of existing project conditions as follows:
 - 1. Site: Take two (2) site photographs at project corners
 - 2. Exterior views: Take two (2) photographs of each elevation.
 - 3. Details: Take as required to document concealed conditions, including, but not limited to, underground construction, utility penetrations and installation, steel erection, concrete and masonry reinforcing, waterproofing and flashing, and roofing installation.
 - 4. Cavity wall: Provide photographic evidence that cavity wall was maintained clean and free of debris and excess mortar.
- E. Identify each photograph with name of Project, room or view, and date.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SUBMITTAL PROCEDURES

01 33 00 - 4

SECTION 01 35 16

ALTERATION PROJECT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. This Section contains general provisions and requirements pertaining to all remodeling, removal and relocation of Work in the existing building and becomes a part of each Section and Division performing remodeling, removal and relocation Work for this Project with the same force and effect as if written in full therein.
- B. Take all necessary precautions to keep trespassers out of the Work areas. Secure Work areas from entry when Work is not in progress.
- C. Perform all alterations, remodeling, demolition, removal and relocation of Work in strict accordance with Owner's instructions and applicable Federal, State and local health and safety standards, codes and ordinances. Where conflicts occur, the more restrictive requirement shall govern.

1.2 RELATED WORK

- A. Section 02 41 16 - Selective Demolition

1.3 EXISTING CONDITIONS

- A. Obvious existing conditions, installations and obstructions affecting the Work shall be taken into consideration as necessary Work to be done, the same as though they were completely shown or described.
- B. Items of existing construction indicated to remain upon completion of the Contract, but which require removal to complete the Work, shall be carefully removed and replaced as required. The replaced Work shall match its condition at the start of the Work unless otherwise required.
- C. Visit the site to determine by inspection all existing conditions, including access to the site, the nature of structures, objects and materials to be encountered, and all other facts concerning or affecting the Work. Information on the Drawings showing existing conditions does not constitute a guarantee that other items may not be found or encountered.
- D. Utilities: Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the Architect in writing two (2) weeks in advance. Provide temporary services during interruptions to existing utilities.

PART 2 - PRODUCTS

2.1 SALVAGED MATERIALS

- A. The Owner reserves the right of first refusal on all salvage items. Remove remaining items from the site as Work progresses. Storage or sale of items on site is not permitted. Burning or burying of removed materials on site is not permitted.

- B. Store salvaged items in a dry, secure place on site.
- C. Salvaged items not required for use in repair of existing Work shall remain the property of the Owner.
- D. Do not incorporate salvaged or used material in new construction except with permission of the Architect.

2.2 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

- A. Contract Documents do not define products or standards of workmanship present in existing construction. Determine products by inspection and by use of the existing. Provide same or similar quality products or types of construction as that in existing structure when needed to patch or extend existing Work.
- B. If reasonably matching products are not obtainable, improve appearance by minor relocating of some existing products and grouping new ones in some pattern arranged by the Architect. Do not replace products scheduled for retaining because matching ones are not obtainable, except as directed by Change Order.

PART 3 - EXECUTION

3.1 PROTECTION OF WORK TO REMAIN

- A. Protect existing Work from damage. Use barricades, tarpaulins, temporary walls, plywood, planking, masking, or other suitable means and methods as approved by the Architect.
- B. If Work to remain in place is damaged, restore to original condition at no additional cost to the Owner.
- C. Concealed Conditions: If conditions cause changes in the Work from requirements of the Contract Documents, the Contract Sum will be adjusted in accordance with the General Conditions.

3.2 PROCEDURES

- A. Refinishing At Removed Work: Cut below surface of substrate materials and patch over area of removal with finish materials so removal is not apparent.
- B. Remove and replace existing ceilings, and cut, patch, or replace existing walls, partitions and floors as may be necessary for access to valves, piping, conduit and tubing by mechanical and electrical trades as directed and approved by the Architect, and performed by the appropriate subcontractor for the Work involved, or by other properly qualified subcontractors.
- C. Patch and extend existing Work using skilled mechanics who are capable of matching existing quality and workmanship. Quality of patched or extended Work shall be not less than that specified for new Work.
- D. Cutting:
 - 1. Concrete and Masonry: Saw cut where feasible.
 - 2. Plaster: Cut back to sound plaster on straight lines, and back-bevel edges of remaining plaster. Trim and prepare existing lath for tying of new lath.
 - 3. Woodwork: Cut back to a joint or panel line. Undamaged removed materials may be reused.
 - 4. Salvaged Materials: Carefully remove to avoid damage, thoroughly clean and reinstall as indicated, or as directed.

5. Structural Elements: Remove only as shown on the Structural Drawings. If not specifically shown, but removal is required, perform such removal or alteration only upon written approval of the Architect. Do not damage or alter any structural element of the existing building.
- E. Patching:
 1. Match existing Work where possible; if unavailable, use salvage material for patching and provide totally new material in areas where salvage has been removed; consult with the Architect concerning locations for salvaging materials.
 2. Repairs or continuations of existing Work shall be relatively imperceptible in the finished Work when viewed under finished lighting conditions from a distance of six (6) feet.
 3. Patching, Repairing and Finishing of Existing Work: Perform in compliance with the applicable requirements of the Specification Section covering the Work to be performed and the requirement of this Section.
- F. Erect scaffolding as necessary to gain access to the various parts of the Work. Provide structurally sound, rigidly braced and properly constructed scaffolding, shoring and bracing as necessary to positively protect the affected elements and building, and to support the activities or workmen and loads. Design and construction of scaffolds and supports shall be in accordance with applicable safety regulations. Material used shall be adequate to support anticipated loads with a properly calculated margin of safety.
- G. Noise Producing Equipment: Minimize use of noise producing equipment. Limit excessive noise to periods of vacancy or provide sound control. Arrange schedules in advance with the Architect.

3.3 PAINTING

- A. Preparation: Prepare patched areas as required for new Work. Wash existing painted surfaces with neutral soap or detergent, thoroughly rinse, and sand when dry.
- B. Painting and Finishing: Conform to the applicable provisions of the Painting Section. Prepare bare areas and patches in existing painted surfaces with specified primer and intermediate coats, sanded smooth and flush with adjoining surfaces.

3.4 DISPOSAL OF DEBRIS

- A. Remove material, debris and rubbish resulting from Work of this Section from the building and site as it accumulates. Keep all areas of Work in "broom clean" condition as the Work progresses.
- B. At completion of renovation and remodeling Work in each area, provide final cleaning and return space to a condition suitable for use by the Owner.

END OF SECTION

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REGULATORY REQUIREMENTS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Quality Assurance.
- B. References Standards.
- C. Definitions.
- D. Abbreviations.
- E. Format and Specification Context Explanations.
- F. Drawing Symbols.
- G. General Requirements.

1.2 QUALITY ASSURANCE

- A. General:
 - 1. For products or workmanship specified by a standard of an association, trade, or Federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable code authorities having jurisdiction.
 - 2. The contractual relationship of the parties to the Contract should not be altered from the Contract Documents by mention or inference otherwise in any reference standard.
 - 3. Obtain copies of standards when required by Contract Documents.
 - 4. Maintain copy of standards at jobsite during submittals, planning, and progress of the specific work for which the standards pertain, until the date of Substantial Completion.
 - 5. In the absence of specific instructions in the specifications, materials, products, equipment and their installation shall conform to the applicable codes, regulations and standards specified therein. When a conflict exists between the applicable code, regulation and standard and that specified, the more stringent code regulation or standard shall prevail, except as authorized by applicable authorities having jurisdiction.
- B. Specifications and Drawings: The Drawings and Specifications are correlative and have equal authority and priority. Base disagreements in themselves or in each other on the most expensive combination of quantity and quality of work indicated. In the event of such disagreement bring it to the attention of the Architect, who will determine the appropriate method to perform the work.
- C. Industry Standards: Where compliance with two (2) or more industry standards or sets of requirements are specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement is intended and will be enforced, unless specifically detailed language written into Contract Documents clearly indicates that a less stringent requirement is to be fulfilled.

REGULATORY REQUIREMENTS

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Refer apparently equal-but-different requirements, and uncertainties as to which level of quality is more stringent, to the Architect for a decision before proceeding.

- D. Contractor's Option: Except for overlapping or conflicting requirements, where more than one (1) set of requirements are specified for a particular unit of work, option is intended to be Contractor's regardless of whether or not it is specifically indicated as such.
- E. Minimum Quality / Quantity: In every instance, the quality level or quantity shown or specified is intended to be the minimum for the work to be performed or provided. Except as otherwise specifically indicated, the actual work may either comply exactly with the minimum (within specified tolerances), or may exceed that minimum within reasonable limits. In complying with requirements, indicated numeric values are either minimums or maximums as noted or as appropriate for context of requirements. Refer instances of uncertainty to Architect for decision before proceeding.
- F. Specialists' Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists, who are engaged for performance of work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements should not be interpreted so as to conflict with applicable regulations, union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of requirements remains with the Contractor.

1.3 REFERENCE STANDARDS

- A. Dates of codes, regulations and standards specified shall be the latest date of issue of that code, regulation or standard prior to the date of issue of this Project Manual or Document, except as modified or otherwise directed by the applicable codes and their supplements and amendments adopted by the code authorities having jurisdiction.
 - 1. Date of Issue - The "date of issue" as it appears in the statement above, means the date which appears on the cover of the Project Manual or Document corresponding to the date of issue of the Contract Documents.
 - 2. Code Authorities: The "code authorities" as it appears in the statement above, means the authorities responsible for code enforcement.

1.4 DEFINITIONS

- A. General Explanation: A substantial amount of specification language consists of definitions for terms found in other Contract Documents, including those in the AIA A201 General Conditions of the Contract for Construction, Supplementary Conditions, the Drawings, and the Specifications. Drawings must be recognized as being diagrammatic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in the Contract Documents are defined in the General Conditions, Supplementary Conditions, and in this Section. Definitions and explanations contained in this Section are not necessarily either complete or exclusive, but are general for this Work to the extent that they are not stated more explicitly in another element of the Contract Documents. In the event of a conflict in definitions or explanations within the Contract Documents or whenever there is need of clarification or interpretation of definitions within or between the Contract Documents, notify the Architect immediately and proceed as directed. Except in cases where definitions are determined by code authorities having jurisdiction, the Architect's interpretation of all definitions will take precedence.

- B. General Requirements: The provisions or requirements of Division 1 - Sections apply to entire Work of Contract and, where indicated, to other elements which are included in the Project.
- C. Special Conditions: Wherever the term "Special Conditions", appears in the Contract Documents, it refers collectively to all requirements of the Owner in addition to the sections in Division 1, General Requirements, and to Articles contained in the General Conditions and Supplementary Conditions.
- D. Architect: Wherever the term "Architect" or any derivative thereof appears in the Contract Documents, it means PBK, 2860 Gateway Oaks Drive, Suite 370, Sacramento, California 95833, (916) 682-9494, or their authorized representative(s).
- E. Bid, Competitive Sealed Proposal (CSP), Response, Offer, etc.: Wherever the term "Bid", "Competitive Sealed Proposal (CSP)", "Response", "Offer", "Proposal", or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall mean Competitive Sealed Proposal, which by definition allows the Owner to accept the "best value" for the school district based on factors other than cost in selecting the Contractor.
- F. Contractor, General Contractor, Construction Manager, etc: Wherever the term "Contractor", "General Contractor", "Construction Manager" or any derivative thereof, or similar term appear in the Contract Documents, they mean one and the same.
- G. Subcontractor, Sub-subcontractor, Bidder, etc.: Wherever the term "Subcontractor", Sub-subcontractor", "Bidder", "Bidder/Vendor", "Vendor", "Installer", "Integrator", "Respondent", "Offeror", or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall refer to the entity (person or firm) licensed and meeting all applicable regulations of the State of California and Department of Labor to perform the Work, or their authorized representative(s).
 - 1. Responsibilities: To avoid any misunderstanding or lack of interpretation, the responsibility for performing the Work is totally that of the entity defined above, and the resolutions proposed in his shop drawings and related documentation shall be demonstrated throughout the Work and specified warranty period.
 - 2. In the event of a controversy involving the Contract Documents or interpretation of Project requirements, the decision of the Architect will take precedence.
- H. District, School District, Owner, etc.: Wherever the term "District", "School District", "Owner", "Santa Rosa City Schools", "SRCS", or similar such term appears in the Contract Documents, it means the Santa Rosa City Schools, 211 Ridgeway Avenue, Santa Rosa, California 95401 phone number (707) 528-5388, or its authorized representative(s).
- J. Indicated: Wherever the term "indicated", or any derivative thereof appears in the Contract Documents, it means a cross-reference to graphic representations, notes, or schedules on Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in the Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.
- K. Directed, Requested, Etc: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" or any derivative thereof appears in the Contract Documents, it means as "directed by the Architect", "requested by the Architect", and similar phrases with actions taken by the

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Architect. However, no meaning or otherwise shall be interpreted to extend the Architect's responsibility into Contractor's area of construction supervision.

- L. Approve: Wherever the term "Approve", or any derivative thereof appears in the Contract Documents, it means only the Architect, or an individual designated by him as his representative, can approve or disapprove contract actions. Even if the specifications indicate that an individual other than the Architect, such as the "Engineer" or "Consultant" will approve or disapprove an action, it is understood that only the Architect has this authority unless the individual is so designated by him in writing. Even when an individual is so designated, the Contractor may appeal the action to the Architect and the Architect's decision will be final. In no case will "approval" by the Architect be interpreted as a release of the Contractor from responsibility to fulfill requirements of the Contract Documents.
- M. Furnish: Wherever the term "Furnish", or any derivative thereof appears in the Contract Documents, it means supply or deliver to Project site, ready for unloading, unpacking, assembly, erection, placing, installing, anchoring, applying, curing, finishing, protecting, cleaning and similar operations, as applicable in each instance.
- N. Install: Wherever the term "Install", or any derivative thereof appears in the Contract Documents, it means performing the operations at the Project site, of unloading, unpacking, assembly, erection, placing, installing, anchoring, applying, curing, finishing, protecting, cleaning and similar operations, as applicable in each instance.
- O. Provide: Wherever the term "Provide", or any derivative thereof appears in the Contract Documents, it means furnish and install at the Project site, complete and ready for intended use, as applicable in each instance.
- P. Project, Site: Wherever the term "Project", "Site", or similar such term appears in the Contract Documents, it means the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing work as part of the Project. The extent of project or site is shown on the Drawings, and may or may not be identical with description of land upon which Project is to be built.
- Q. Installer: Wherever the term "Installer", or any derivative thereof appears in the Contract Documents, it means the entity (person or firm) engaged by the Contractor or its subcontractor or sub-subcontractor for performance of a particular unit of work at the Project, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.
- R. Specialist: Wherever the term "Specialist", or any derivative thereof appears in the Contract Documents, it means an individual or firm of established reputation (or if newly organized, whose personnel have previously established a reputation in the same field), which is regularly engaged in, and which maintains a regular force of workmen skilled in either (as applicable) manufacturing or fabricating items required by the Contract, installing items required by the Contract, or otherwise performing work required by the Contract. Where the Contract Specification requires installation by a specialist, that term shall also be deemed to mean either the manufacturer of the item or firm who will perform the work under the manufacturer's direct supervision.
- S. Testing Laboratory: Wherever the term "Testing Laboratory", or any derivative thereof appears in the Contract Documents, it means an independent entity engaged to perform specific inspections or tests of the work, either at the Project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

1.5 FORMAT AND SPECIFICATION CONTEXT EXPLANATIONS

- A. Underscoring: Is used strictly to assist reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance is intended where underscoring is used.
- B. Capitalization: Except for manufacturer, product, or trademark names, capitalization is used strictly to assist reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance is intended where capitalization is used.
- C. Imperative language: Is used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or when so noted, by others.
- D. Section Numbering: Is used to facilitate cross-reference in Contract Documents. Sections are placed in Project Manual in numeric sequence; however, numbering sequence is not complete, and listing of sections at beginning of Project Manual must be consulted to determine numbers and names of specification sections in Contract Documents.
- E. Page Numbering: Pages are numbered independently for each section. The section number is shown preceded by the project number and followed by the page number at the bottom of each page, to facilitate the location of text. The project number is given to identify the project, for which specification was written, should the section become separated from the Project Manual.
- F. Specifying Methods: The techniques or methods of specifying to record requirements varies throughout text, and may include "prescriptive, "open-generic descriptive", "compliance with standards", "performance", or a combination of these. The method used for specifying one unit of work has no bearing on requirements for another unit of work.
- G. Abbreviations: The language of Specifications and other Contract Documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual work abbreviations of a self-explanatory nature have been included in texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in section at first instance of use. Trade association names and titles of general standards are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of the Contract Documents so indicates. A list of typical abbreviations, includes, but is not limited to the following trade associations and organizations. Refer to Drawings and other Contract Documents for other abbreviations.

AA	Aluminum Association
AAMA	Architectural Aluminum Manufacturer's Assn.
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
AGA	American Gas Association
AGC	Associated General Contractors of America
AHA	American Hardboard Association
AHGA	American Hotdip Galvanizers Association
AI	Asphalt Institute
AIA	American Institute of Architects

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AISC	American Institute of Steel Construction
AISI	American Iron & Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
APA	American Plywood Association
ARI	Air Conditioning & Refrigeration Institute
ASA	Acoustical Society of America
ASA	American Subcontractors Association
ASAH	American Society of Architectural Hardware Consultants
ASC	Adhesive & Sealant Council, Inc.
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Professional Engineers
ASPI	American Wood Preserver's Institute
ASTM	ASTM International
AWI	Architectural Woodwork Institute
AWS	American Welding Society
BIA	Brick Institute of America
BRI	Building Research Institute
CRA	California Redwood Association
CLFMI	Chain Link Fence Manufacturers Institute
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DHI	Door and Hardware Institute
EPA	Environmental Protection Agency
FTI	Facing Tile Institute
FGMA	Flat Glass Marketing Association
GA	Gypsum Association
HPMA	Hardwood Plywood Manufacturers Association
IBC	International Building Code
ICBO	International Conference of Building Officials
ICC	International Code Council
IEEE	Institute of Electrical and Electronic Engineers
JSMA	Joint Sealer Manufacturers Association
MFMA	Maple Flooring Manufacturers Association
ML/SFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NAMM	National Association of Mirror Manufacturers
NBLP	National Bureau of Lathing & Plastering
NCPI	National Clay Pipe Institute
NCMA	National Concrete Masonry Association
NEMA	National Electrical Manufacturers Assn.
NESC	National Environmental Systems Contractors
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NHLA	National Hardwood Lumber Association
NOMMA	National Ornamental Metal Manufacturers Assn
NPVLA	National Paint, Varnish and Lacquer Assn.
NRMCA	National Ready Mixed Concrete Assn.
NRCA	National Roofing Contractors Association
NSPE	National Society of Professional Engineers
NWMA	National Woodwork Manufacturers Assn., Inc.
OSHA	Occupational Safety and Health Administration
PDCA	Painting and Decorating Contractors of America
PI	Perlite Institute, Inc.

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PCA	Portland Cement Association
RFCI	Resilient Floor Covering Institute
RVFC	Rubber and Vinyl Floor Council
SBCCI	Southern Building Code Congress International, Inc.
SFPA	Southern Forest Products Association
SHLMA	Southern Hardwood Lumber Manufacturing Assn.
SDI	Steel Deck Institute
SDI	Steel Door Institute
SJI	Steel Joist Institute
SSPC	Steel Structures Painting Council
TCA	Tile Council of America, Inc.
UBC	Uniform Building Code
UL	Underwriter's Laboratories, Inc.
VBI	Venetian Blind Institute
VFI	Vinyl Fabrics Institute
WCLIB	West Coast Lumber Inspection Bureau
WRCLA	Western Red Cedar Lumber Association
WWPA	Western Wood Products Association

1.6 DRAWING SYMBOLS

- A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols defined by "Architectural Graphic Standards", published by the American Institute of Architects (AIA) and John Wiley & Sons, Inc., latest edition. Refer instances of uncertainty to Architect for clarification before proceeding.
- B. Mechanical / Electrical Drawings: Graphic symbols used in Mechanical/Electrical Drawings are generally aligned with symbols recommended by American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE). Where appropriate, those symbols are supplemented by more specific symbols as recommended by other recognized technical organizations, including, but not limited to American Society of Mechanical Engineers (ASME), American Society of Professional Engineers (ASPE), Institute of Electrical and Electronic Engineers (IEEE) and similar organizations. Refer instances of uncertainty to Architect for clarification before proceeding.

1.7 GENERAL REQUIREMENTS

- A. Color, Texture, or Pattern Requirements:
1. When color, texture, or pattern is specified, the item, product, or material shall be furnished in the specified color, texture, or pattern, as applicable.
 2. When more than one (1) approved manufacturer is named in the Specifications, Contractor may select any of the approved manufacturers and submit the full range of colors, textures, and patterns (standard and special) available of that manufacturer for the Architect's review and selection.
 3. When the term "match existing", or any derivative thereof appears in the Contract Documents, it means that the sample must match the Owner's existing work in every respect as to color, texture, and pattern, as applicable.
 4. When the term "match Architect's approved sample", or any derivative thereof appears in the Contract Documents, it means that the Architect has selected a sample which must be matched in every respect as to color, texture, and pattern, as applicable.
 5. When an item or product is specified of a manufacturer for which only one (1) color, texture, or pattern is available, and a color, texture, or pattern other than that one is specified, Contractor shall bring it to the attention of the Architect for a

- decision prior to proceeding with the work. Do not proceed with the work until Architect has approved the color, texture, and pattern, as applicable.
6. When an item or product is specified of a manufacturer for which no color, texture, or pattern is specified, and colors, textures, and patterns are available, Contractor shall bring it to the attention of the Architect and submit the full range of colors, textures, and patterns (standard and special) available of that manufacturer for the Architect's review and selection. Do not proceed with the work until Architect has selected and approved the color, texture, and pattern, as applicable.
 7. When due to the nature of the item, product, or material, i.e. face brick, tile pavers, natural stone, etc, Contractor shall submit sample or samples which exhibits the full range of characteristics (colors, i.e. lights and darks, as well as textures, and patterns) for which the item, product, or material is available. The Architect will select the color, texture, and pattern, as applicable, from those available and request a sample panel exhibiting the approved characteristics. The approved color range, texture, and pattern, as applicable will then become the standard for which all work on the project will be judged. Architect will be final judge as to having performed work in conformance with approved characteristics.
 8. Under no circumstances are colors, textures, patterns, or any other characteristics for which an item, product, or material are available to be selected by anyone other than the Architect or his authorized representative.
 9. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.
- B. Continuity of Building Envelope, Full Height Partitions, and Fire Rated Construction:
1. Continuity of Building Envelope:
 - a. All materials such as exterior sheathing, membrane flashings, vapor barriers, insulations, dampproofing, waterproofing, roofing, flashings, etc. and all penetrations, holes, gaps, joints, and openings through such materials shall be sealed to ensure continuity of building envelope, whether indicated or not.
 - b. Refer instances of uncertainty to Architect for clarification before proceeding with work.
 2. Full Height Partitions:
 - a. All full height partitions shall be from floor to bottom of deck structure and shall be made to fit around steel joists, beams, etc., whether indicated or not.
 - b. Seal joints at top of partitions, in flutes of steel deck, and around structural elements with a compressible filler and/or sealant to accommodate movement due to expansion, contraction, and deflection, whether indicated or not. Treat seals in joints of fire rated partitions as specified below for fire rated construction, whether indicated or not.
 - c. Refer instances of uncertainty to Architect for clarification before proceeding with work.
 3. Fire Rated Construction:
 - a. All seals in fire rated construction, whether at top, bottom, or penetrations through fire rated construction, shall be made with firestopping and fire safing materials to maintain fire rating integrity of construction and satisfy authorities having jurisdiction, whether indicated or not.
 - b. Refer instances of uncertainty to Architect for clarification before proceeding with work.
- C. Plumbing Line Protection:
1. Placing or washing materials, including, but not limited to the following, down any plumbing line or fixture is strictly forbidden.

- a. Concrete, cement, sludge, mortar, grout, plaster, or any other cementitious material
 - b. Paint, paint thinner, turpentine, kerosene, gasoline, oil, or any other petroleum or hazardous products.
 2. Cleaning painting equipment, including brushes in new or existing plumbing fixtures is strictly prohibited.
 3. If requested, Contractor shall certify that all affected plumbing lines and fixtures are clean, free flowing and running. Plumbing lines and fixtures damaged as a result of any of the above shall be repaired or replaced at no expense to Owner. Contractor shall bear responsibility and all costs of fines, penalties, and legal fees attributed to violations as levied by authorities having jurisdiction.
- D. Hanging Items from Deck and Structure: Ducts, pipes, conduits, equipment, and other items indicated to be supported from the structure shall be accomplished using approved hang wires, hangers, or devices of type, size and material recommended to suit the application and installed in accordance with recommendations of the hanger or device manufacturer, Architect and/or Structural Engineer, or code authorities having jurisdiction, whichever is the more stringent requirement. Nothing shall be hung from the deck and structure unless directed to do so by the Architect and/or Structural Engineer. Powder activated devices in metal deck are not permitted.
- E. Ducts, Pipes, Conduits, and Wires: Shall be concealed in walls, chases, and enclosed areas out of view, unless specifically indicated as exposed or where exposure is required for proper function of item, such as air registers, air returns, louvers, grilles, vents, thermostats, electrical receptacles, telephone/data terminals and jacks, light switches, etc. Refer instances of uncertainty to Architect for clarification before proceeding.
- F. Fasteners:
1. Unless specifically indicated or directed otherwise, all fasteners in work exposed to view, shall be concealed in the finished work.
 2. No fasteners shall show through or telegraph through exposed face of finished work and all finished surfaces shall be free of all evidence of the existence of fasteners.
 3. Fasteners shall be spaced to accurately and rigidly secure work in place.
 4. If not shown or otherwise required or recommended by manufacturer, standard, or code authorities having jurisdiction, fastener spacing shall not exceed 12 inches on center.
 5. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.
- G. Exposed Metal Work:
1. Unless specifically indicated or directed otherwise, all exposed metal work shall be flat with all surfaces free of distortions, oil canning, waves, dents, scratches, weld marks, and other surface defects detrimental to good appearance or function.
 2. All steel exposed to exterior weather or moisture, either exposed or concealed in work, shall be hot-dip galvanized, phosphate treated for paint retention and shop prime painted.
 3. Non-conforming work shall be removed from the site and replaced with new conforming work at no additional expense to Owner.
- H. Continuous Date and Time Code Operated Devices:
1. Devices used in the construction of this Project which use continuous date and time codes in their operation, whether software or hardware, and whether upgradable or not, including, but not limited to air handling, lighting, alarm, communication, security, and instrumentation systems, elevators, escalators and

other conveying systems. In addition, such devices shall remain compliant for 100 years or the life of the device, whichever comes first.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Quality Assurance: Requirements for material and product quality and control of installation.
- B. Tolerances
- C. References and Standards
- D. Mock-ups
- E. Testing Laboratory Services
- F. Inspection Services
- G. Manufacturers' field services

1.2 RELATED SECTIONS

- A. Section 01 41 00 – Regulatory Requirements
- B. Section 01 45 23 – Testing and Inspecting Services
- C. Section 01 33 00 - Submittal Procedures
- D. Section 02 32 00 - Geotechnical Report
- E. The Work of this Section shall be included as a part of all Sections of Work, whether referenced therein or not.

1.3 DESCRIPTION OF REQUIREMENTS

- A. Unless specifically noted otherwise, perform all Work shown, mentioned, or reasonably inferred and comply with all work restrictions.
- B. Many of the requirements specified elsewhere are included herein for reference and convenience. Where a conflict occurs between the Contract Documents, either within themselves or each other, the more stringent requirement or the most expensive combination of materials and workmanship shall prevail.
- C. Contractor shall:
 - 1. perform Work in accordance with the General Conditions, as specified herein, and with the quality control requirements of each Specification Section;
 - 2. perform Work in the highest quality workmanship, unless specified otherwise;
 - 3. join materials with a uniform and accurate fit so they meet with neat straight lines, free of smears, overlaps or irregularities, as applicable to the work;
 - 4. install all exposed materials appropriately level, plumb, and at accurate angles as shown and flush with adjoining materials;

5. attach materials with sufficient strength, and with number and spacing of fasteners and attachments that will not fail until materials joined are broken or permanently deformed;
6. use concealed fasteners, unless shown or directed otherwise.

1.4 QUALITY ASSURANCE AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturer's instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.5 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.6 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade, or other consensus standards; comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Owner-Contractor Agreement except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Architect / Engineer before proceeding.
- E. Neither contractual relationships, duties, responsibilities of parties in Contract nor those of Architect / Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

- F. Refer to Section 01 41 00, Codes, Regulations and Standards, for additional information concerning applicable reference and standards requirements.

1.7 MOCK-UP REQUIREMENTS

- A. Tests will be performed under provisions identified in this section and identified in respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be the comparison standard for remaining Work.
- D. Where mock-up has been accepted by Architect / Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Architect.
- E. Mock-up may be approved in phases as portions are completed.
- F. Project Mock-up Requirements: Provide an actual sample panel with the following properties:
 - 1. Size: Minimum 6 feet wide by 8 feet tall. Size may vary according to specific project requirements. Brace and support as required to withstand structural windloads.
 - 2. Materials: actual exterior finishes including, but not limited to face brick, cast stone, and plaster, actual building materials and assemblies indicating brick patterns on masonry and stud back-up as occurs with dampproofing and flashing as detailed, actual portion of aluminum storefront indicating jam, sill and head attachment and flashing details, and where appropriate, provide mock-up of special finish details, insets and reliefs, reveals, expansion and control joints, brick ledges, brick head and sills, pipe penetrations and waterproofing materials. Provide roof edge flashing and gutter section (as applicable) in pre-finished color as selected by Architect to cap the mock-up panel. Include a sealant joint at least 16 inches long. Brick and Mortar color shall be selected by Architect prior to mock-up assembly.
 - 3. Drawing: Refer to mock-up diagram on Drawings for minimum project requirements. Mock-up drawing is for reference only. Actual mock-up drawing will be submitted by the Architect after submittals have been approved.

1.8 TESTING SERVICES

- A. Owner will appoint, employ, and pay for specified services of an independent firm to perform testing.
- B. The independent firm will perform tests and other services specified in individual specification sections and as required by the Architect/Engineer, Owner, or authority having jurisdiction.
- C. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Architect/Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Owner, Architect/Engineer, and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

1. Notify Architect / Engineer and independent firm 48 hours prior to expected time for operations requiring services, or as specified in individual specification sections.
 2. Make arrangements with independent firm and pay for additional samples and tests required.
- F. Testing does not relieve Contractor to perform Work to contract requirements.
- G. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect / Engineer. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Sum / Price.
- H. Refer to Section 01 45 23, Inspection and Testing Laboratory Services, for additional information concerning testing, and submittal procedures and requirements for Testing Reports.

1.9 INSPECTION SERVICES

- A. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspection.
- B. The independent firm will perform inspections and other services specified in individual specification sections and as required by the Architect / Engineer, Owner, or authority having jurisdiction.
- C. Inspecting may occur on or off the project site. Perform off-site inspecting as required by the Architect/Engineer or the Owner.
- D. Reports will be submitted by the independent firm to the Owner, Architect / Engineer, and Contractor, indicating inspection observations and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish safe access and assistance by incidental labor as requested.
1. Notify Architect / Engineer and independent firm 48 hours prior to expected time for operations requiring services, or as specified in individual specification sections.
- G. Inspecting does not relieve Contractor to perform Work to contract requirements.
- H. Refer to Section 01 45 23, Inspection and Testing Laboratory Services, for additional information concerning inspections, and submittal procedures and requirements for Inspection Reports.

1.10 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as required, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Architect/Engineer within ten (10) days after receipt of Notice to Proceed, in advance of required observations. Observer subject to approval of Architect/Engineer and Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

- D. Refer to Section 01 33 00, Submittal Procedures, for additional information concerning submittal procedures and requirements for Manufacturers Field Reports.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 45 23

TESTING AND INSPECTING SERVICES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. A qualified independent testing laboratory and / or geotechnical engineering service selected and paid by Owner and approved by Architect, will perform professional testing and laboratory services specified herein.
- B. Inspecting agency shall make and perform all inspections and tests in accordance with the rules and regulations of the building code, local authorities, Specifications of ASTM, and these Contract Documents.
- C. Materials and workmanship not meeting required standards or performance obligations are to be removed and replaced. Replacement and subsequent testing shall be at Contractor's expense.
- D. Where terms "Inspector" and "Laboratory" are used, they mean and refer to an officially designated and accredited inspector of the testing laboratory or geotechnical service engaged by Owner.
- E. All testing laboratory services will be provided and paid for by the Owner and the Contractor shall be notified as soon as possible.
- F. The Owner will pay for the initial laboratory services of materials that comply with the requirements of the Contract Documents. The Contractor shall pay for testing and re-testing of materials that do not comply with the requirements of the Contract Documents.
- G. Laboratory inspection shall not relieve the Contractor or Fabricator of his responsibility to furnish materials and workmanship in accordance with the Contract Documents.
- H. Contractor or Fabricator shall cooperate with the testing laboratory in all matters pertaining to the work.

1.2 RELATED REQUIREMENTS

- A. Conditions of the Contract: Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals or public authorities.
- B. Respective Sections of Specifications. Certification of products.
- C. Each Specification Section Listed: Inspection and laboratory test required and standards for inspection and testing.
- D. Testing laboratory inspection, sampling and testing is required for:
 - 1. Section 04 20 00 - Unit Masonry
 - 2. Division 05 - Metals: As specified or required for structural steel, open web steel joists, steel deck, miscellaneous metals, etc.
 - 3. Division 07 - Thermal and Moisture Protection: As specified or required for waterproofing and roofing.

TESTING AND INSPECTING SERVICES

4. As requested by the Construction Manager/Contractor, Owner, Architect, or Engineer(s).

1.3 QUALIFICATIONS

- A. Testing agencies shall meet requirements of ASTM E329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction" and ASTM E543, "Standard Practices for Agencies Performing Non-Destructive Testing".
- B. Testing agencies shall be insured against errors and omissions by a professional liability insurance policy having a minimum limit of liability of \$500,000.00.
- C. Inspection and testing services of testing agency shall be under the direction of a Registered Engineer licensed in the State of California, charged with engineering managerial responsibility, and having a minimum of five (5) years engineering experience in inspection and testing of construction materials.
- D. Inspecting personnel monitoring concrete work shall be ACI certified inspectors.
- E. Primary inspectors performing structural steel inspection shall be currently certified AWS Certified Welding Inspectors (CWI), in accordance with the provisions of AWS QCI, "Standard and Guide for Qualification and Certification of Welding Inspectors". Inspector may be supported by assistant inspectors who may perform specific inspection functions under supervision of the inspector. Assistant inspectors shall be currently certified AWS Certified Associate Welding Inspectors (CAWI). Work of assistant inspectors shall be regularly monitored by the inspector, generally on a daily basis.
- F. Testing machines shall be calibrated at intervals not exceeding 12 months by devices of accuracy traceable to the National Bureau of Standards.

1.4 RESPONSIBILITIES OF CONTRACTOR

- A. See respective technical sections for specific requirements.
- B. Deliver to the laboratory, without cost to Owner, adequate quantities of representative samples of materials proposed for use which are required to be tested.
- C. Advise laboratory and Architect sufficiently in advance of construction operations to allow laboratory to complete any required checks or tests and to assign personnel for field inspection and testing as specified.
- D. Provide adequate facilities for safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing as required by ASTM C31.
- E. Furnish such nominal labor and equipment as is required to assist laboratory personnel in obtaining and handling samples at the site and in accessing work for inspection.
- F. Furnish concrete mix designs, in accordance with ACI 301, Section 3.9, made by an independent testing laboratory or qualified concrete supplier. Where mix designs by an independent testing laboratory are required, the laboratory shall be selected and paid by the Contractor.
- G. Obtain required inspections or approvals of the building official. All inspection requests and notifications required by building code are responsibility of the Contractor.

- H. Provide current welder certificates for each welder to be employed.
- I. Furnish fabrication/erection inspection and testing of all welds in accordance with AWS D1.1, Chapter 6.
- J. Prequalification of all welding procedures to be used in executing the work.

1.5 AUTHORITY AND DUTIES OF LABORATORY PERSONNEL

- A. A representative of the testing laboratory, who has reviewed and is familiar with the project and specifications, shall participate in all pre-construction conferences. He shall coordinate material testing and inspection requirements with the Contractor and his subcontractors consistent with the planned construction schedule. The laboratory representative shall attend, throughout the course of the project, such conferences as may be required or requested to address quality control issues.
- B. Laboratory personnel shall inspect and/or test materials, assemblies, specimens, and work performed, including design mixes, methods and techniques and report to the Architect the progress thereof.
- C. If material furnished and/or work performed fails to meet requirements of Contract Documents, laboratory inspector shall promptly notify the Construction Manager, Architect, Engineers, supplier and / or subcontractor providing or preparing the materials or work being tested of such failure.
- D. Laboratory technicians do not act as foremen, or perform other duties for Contractor. Work will be checked as it progresses, but failure to detect any defective work or materials shall not, in any way, prevent later rejection when such defect is discovered.
- E. Laboratory inspector is not authorized to revoke, alter, relax, enlarge, or release any requirement of the Contract Documents or to approve or accept any portion of work, except where such approval is specifically called for in the Specifications.
- F. Comply with all building code requirements for "Special Inspection" whether or not such inspections are specified herein.

1.6 SUBMITTALS

- A. Submit copies of reports of each and every inspection and test as follows:
 - 1. Owner, Program or Project Manager, Architect, and each Engineer or outside consultants regarding their particular phase of the project: One (1) each
 - 2. Construction Manager, if applicable, and Contractor: Two (2) each
- B. State in report all details of each inspection and test. Indicate compliance or noncompliance with requirements of Contract Documents. Also state in report any and all unsatisfactory conditions.
- C. In addition to furnishing a written report, notify Construction Manager, if applicable, and Contractor verbally of any uncorrected conditions or failures to comply with requirements of the Contract Documents, and immediately Fax corresponding report to the Architect and Engineer.
- D. At completion of each trade or branch of work requiring inspecting and testing, submit a final certificate attesting to satisfactory completion of work and full compliance with requirements of Contract Documents.

- E. Submit copies of test results, sealed by a Registered Engineer, to municipal authorities having jurisdiction, as required.

1.7 REFERENCED STANDARDS

- A. Latest adopted edition of all standards referenced in this Section shall apply, unless noted otherwise. In case of conflict between these Contract Documents and a referenced standard, the Contract Documents shall govern. In case of conflict between Contract Documents and the Building Code, the more stringent shall govern.

1.8 TESTING LABORATORY GUIDELINES AND PROCEDURES

- A. Technicians scheduled to perform specific testing services must be qualified to review and perform other services that overlap, i.e. earthwork, foundation inspections, rebar inspection, and concrete when scheduled concurrently at the Project site.
- B. Technician time for services performed will be reimbursed at a regular time rate. Compensation at the overtime rate will be considered for any hours over eight (8) hours spent at the job site on a single day, field testing services performed on a Saturday or Sunday, and any field services performed on a recognized holiday.
- C. There will be a three (3) hour minimum for each scheduled testing service. Vehicle charges will be included on a \$25.00 per trip basis.
- D. Cylinder pick-up will be handled by the technician performing test on a scheduled pick-up day. If there are no testing services scheduled, the cylinder pick-up fee will be \$40.00 on week days and \$50.00 on weekends and holidays with no technician or vehicle charge.
- E. The Contractor shall bear the responsibility of scheduling all of the test services. The Contractor and the testing laboratory shall assume full responsibility to coordinate the testing services. Cancellations and/or failed test will be reimbursable to the Owner by the responsible party for the cancellations or failure of a test or service.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 GENERAL

- A. Testing services shall include, but not be limited to those specified below or which are necessary or required during course of construction to ascertain specification compliance and which may be deemed necessary by Architect, Engineer, or Owner to ensure the quality of the Work.
- B. The Owner reserves the right to add to or delete any or all inspection and testing specified herein, excluding testing as required by the applicable building codes.
- C. If conflicts arise between Drawings and Specifications, notify Architect immediately. In any case the most stringent requirements shall dictate procedure.

3.2 TESTING OF ROOFING

- A. Inspection and Observation Services (As required):
 - 1. Inspection of roof deck prior to start of work.

TESTING AND INSPECTING SERVICES

2. Inspect on-site condition of stored roofing materials.
 3. Inspection during roofing, roof insulation, and sheet metal work to ascertain compliance with Contract Documents.
 4. Observation of roof test cuts performed by Contractor to ascertain that they are properly made.
 5. Observation of patching of roof test cuts to ascertain that they are properly made.
- B. Testing Services (As required):
1. Perform dissection and analysis on cuts provided by Contractor to confirm number of plies, bonding of plies, weight of bitumen and softening temperature to ascertain compliance with specifications.

3.3 MASONRY

- A. Inspection and Observation Services:
1. Inspection of placement of reinforcement including condition, grade, size, location, spacing, and lap splices.
 2. Review mortar design mixes.
 3. Inspection of laying, mortaring, and grouting of concrete masonry units and elements.
- B. Testing Services:
1. References (As applicable for tests required):
 - a. ASTM International (ASTM)
 - 1) C140, Standard Test Methods of Sampling and Testing Concrete Masonry Units
 - 2) C780, Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
 - 3) C1019, Standard Test Method for Sampling and Testing Grout
 - 4) E447-97, Standard Test Methods for Compressive Strength of Laboratory Constructed Masonry Prisms
 2. Testing of Concrete Masonry Units (CMU):
 - a. Preconstruction: Perform the following tests in accordance with ASTM C140.
 - 1) Compressive Strength
 - 2) Absorption
 - 3) Weight
 - 4) Moisture Content
 - 5) Dimensions
 3. Mortar Tests:
 - a. Preconstruction: Perform the following tests in accordance with ASTM C780 on each type of mortar mix used on the Project.
 - 1) 28 Day Compressive Strength
 - 2) Water Retention
 - b. Construction: Perform 28 day compressive strength test in accordance with ASTM C780 on each type of mortar mix used on the Project at the rate of one (1) test per 2,000 square feet of masonry.
 4. Refer to and include work for reinforcing steel specified in Paragraphs 3.5 and 3.6 above.
 5. Grout Tests:
 - a. Preconstruction: Perform the following tests in accordance with ASTM C1019 on each type of grout mix used on the Project.
 - 1) Slump Test
 - 2) 28 Day Compressive Strength
 - 3) Construction: Perform 28 day compressive strength test in accordance with ASTM C1019 on each type of grout mix used on

- the Project at the rate of one (1) test per 2,000 square feet of masonry.
- 4) Prism Test: Perform preconstruction 28 day compressive strength test on concrete masonry walls in accordance with ASTM E447-97, Method B.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Specific administrative and procedural minimum actions are specified in this Section, as extensions of provisions in other Contract Documents. These requirements have been included for special purposes as indicated. Nothing in this Section is intended to limit types and amounts of temporary work required, and no omission from this Section will be recognized as an indication that such temporary activity is not required for successful completion of the Work and compliance with requirements of the Contract Documents. Provisions of this Section are applicable to, but are not limited to the temporary power, temporary water, temporary heat, field office, mobile telephone, sanitary facilities, storage facilities, signs, barriers, security, construction fence, cleaning, first aid facilities, fire protection, construction aids, parking facilities, storm water control and pollution prevention plan, as further expanded in this Section.

1.2 JOB CONDITIONS

- A. General: Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the Work. Terminate use and remove facilities at earliest reasonable time, when no longer required or when permanent facilities have, with authorized use, replaced their need.
- B. Conditions of Use:
 - 1. Install, operate, maintain and protect temporary facilities in a manner and at locations which will be safe, non-hazardous, sanitary, and protective of persons and property, and free of deleterious effects.
 - 2. Be responsible for overloading or excess use of or damage resulting from the overloading or excess use of existing utilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials, not specifically described herein, but required for proper completion of Work of this Section, may be new or used as selected by the Contractor, but shall be of design, type, size, and strength recommended to suit intended purpose.
- B. Items required to protect the tenants, workmen, and public from danger, shall be sufficiently designed to protect them. Where required, exclude the public from all hazards.

PART 3 - EXECUTION

3.1 UTILITIES

- A. Temporary Power: Provide temporary power and all wiring, lamps, distribution of power, and equipment required for construction, inspection and testing of Work.

- B. Temporary Water: Provide temporary water and all hoses and equipment required for construction, inspection and testing of Work.
- C. Temporary Climate Control: Provide temporary climate control (heating, cooling and humidity control) required for construction of Work.
 - 1. Provide heat to prevent freezing and to avoid damage to materials in storage, during and after installation, and during curing and drying of materials and finishes. Provide and maintain such dependable source of supply of heat, cooling, and humidity control as necessary until the Work is accepted. No open fire heaters will be permitted. No mold, mildew, rust, or sagging materials due to humidity will be allowed. Contractor shall remediate any and all evidence of mold, mildew, or rust per applicable state standards and requirements.

3.2 FIELD OFFICE

- A. Furnish an area in a suitable location on site for use by the Owner, Contractor and the Architect.
- B. Provide job telephone and other miscellaneous items as outlined below.
 - 1. Maintain a complete set of Construction Documents, Submittals, Record Documents, and other pertinent information for Contractor, Architect, Engineer, and Owner use.

3.3 MOBILE TELEPHONE

- A. Furnish and maintain a mobile telephone for his superintendent's use for the duration of the Project.

3.4 SANITARY FACILITIES

- A. Furnish and maintain temporary sanitary facilities. Comply with regulations of State Department of Health and other authorities having jurisdiction. The Contractor may not use the Owner's facilities.

3.5 STORAGE FACILITIES

- A. Provide and maintain adequate weathertight lockable storage facilities, raised above the ground, with sides and top enclosed.
- B. Replace materials improperly stored and damaged by weathered conditions.
- C. Remove storage facilities when materials can be stored within the structure in a weathertight condition.
- D. Provide for temporary freeze protection as needed.

3.6 SIGNS

- A. Contractor/Sub Contractor signs:
 - 1. Contractor/Sub Contractor company sign; limit 6SQF
- B. Other signs permitted at the site:
 - 1. Warning signs
 - 2. Directional signs
 - 3. Identification signs at field offices
 - 4. Emergency medical services sign

TEMPORARY FACILITIES AND CONTROLS

- 5. Signs required by Authorities Having Jurisdiction
- 6. Storm Water Pollution Prevention Plan sign (SWPPP)

- C. Contractor shall allow no other signs to be displayed at the project site, unless authorized by the Owner.

3.7 BARRIERS

- A. Provide temporary barricades on all portions of the site adjacent to the construction and accessible to the public.
- B. Provide approved barriers around trees and plants designated to remain. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials, water puddling and continuous running water.

3.8 SECURITY

- A. Determine if and when watchmen are necessary for protection of the Work, and provide such services when necessary. Neither the provision of watchmen nor the failure to provide watchmen shall relieve the Contractor of responsibility in event of injury to persons or damage to property.

3.9 CONSTRUCTION FENCE

- A. Provide a minimum 6 feet-0 inch high chain link construction fence around the perimeter of the construction area for the duration of the construction period. Said temporary construction fence shall have lockable access gates necessary to adequately access the site in order to execute the project. Access gates shall be locked at the completion of each day's work.

3.10 CLEANING

- A. Trash removal: Clear the building and site of trash at least once a week. When rapid accumulation occurs, make more frequent removals. Remove highly combustible trash such as paper and cardboard daily. Dumpsters will not be allowed to overflow and should be emptied on a regular basis.
- B. Disposition of Debris: Remove debris from site and make legal disposition. Locations for disposal shall be of the Contractor's choice within the above restriction. Neither debris nor material may be buried or burned at the site. Take necessary precautions to prevent accidental burning of materials by avoiding large accumulations of combustible materials.
- C. Final Cleaning: Thoroughly clean the Work, including the removal of smudges, marks, stains, fingerprints, soil, dirt, paint spots, dust, lint, discolorations, and other foreign materials.

3.11 TEMPORARY FIRST AID FACILITIES

- A. Provide first aid equipment and supplies, with qualified personnel continuously available to render first aid at the site.
- B. Provide a sign, posted at the field office telephone, listing the telephone numbers for emergency medical services: Physicians, ambulance services and hospitals.

3.12 TEMPORARY FIRE PROTECTION

- A. Provide a fire protection and prevention program for employees and personnel at the site; and provide and maintain fire extinguishing equipment ready for instant use at all areas of the Project and at specific areas of critical fire hazard.
- B. Equipment:
 - 1. Hand extinguishers of the types and sizes recommended by the National Board of Fire Underwriters to control fires from particular hazards.
 - 2. Barrels of water with buckets designated for fire-control purposes.
 - 3. Water hoses connected to an adequate water pressure and supply system.
 - 4. Construction period use of permanent fire protection system.
- C. Enforce fire-safety discipline:
 - 1. Store volatile materials in an isolated, protected location.
 - 2. Avoid accumulations of flammable debris and waste in or about the Project.
 - 3. Prohibit smoking in the vicinity of hazardous conditions.
 - 4. Closely supervise and provide fire watches as required by authorities having jurisdiction during and after welding and torch-cutting operations in the vicinity of combustible materials and volatile conditions.
 - 5. Supervise locations and operations of portable heating units and fuel.
- D. Contractor shall maintain fire-extinguishing equipment in working condition, with current inspection certificate attached to each extinguisher.

3.13 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required to assure safety for personnel and to facilitate the execution of the Work; Scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other equipment.
- B. Maintain all equipment in a first-class, safe condition.

3.14 PARKING FACILITIES

- A. Coordinate location of parking for personnel and employees at the facility to avoid interference with traffic, walks, work and storage areas, or with materials-handling equipment.
- B. Grade and provide drainage facilities to assure runoff of rainwater and to avoid blockage of flow from adjacent areas.

3.15 STORM WATER CONTROL & POLLUTION PREVENTION PLAN

- A. Grade and provide drainage facilities to assure runoff of rainwater and to avoid blockage of flow from adjacent areas. Refer to Civil Drawings for additional requirements.
- B. Provide and maintain a Storm Water Pollution Prevention Plan in accordance with Federal EPA requirements.
- C. File an EPA "Notice of Intent" Form with the EPA **before construction begins.**

END OF SECTION

SECTION 01 71 23

FIELD ENGINEERING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Measures to ensure adequate quality control and quality assurance for all Work in accordance with Conditions of the Contract, as specified herein, and with the quality control and quality assurance requirements of each Specification Section, and authorities having jurisdiction.

1.2 RELATED SECTIONS

- A. All Sections of Work requiring layout, survey, reference points and their verification and protection, and quality control and assurance monitoring requirements.

1.3 DEFINITIONS

- A. Survey and Field Engineering: Wherever the terms "Survey", "Field Engineering" or any derivative thereof, or similar term appears within this Section, they mean one and the same, and shall mean the survey or field engineering work performed by the Field Engineer as defined below and is separate from that of the survey work provided by the Owner.
- B. Field Engineer: Wherever the term "Field Engineer" or any derivative thereof, or similar term appears in the Contract Documents, it shall refer to the General Contractor's employee(s) that are expert in, routinely engaged in, and have at least five (5) years experience in, the practice of construction project field engineering, building and project layout, construction measurements and monitoring, etc.
- C. "Construction Surveyor": Wherever the term "Construction Surveyor", or any derivative thereof, or similar term appears in the Contract Documents, the entity (person or firm) licensed as a Registered Professional Land Surveyor or Professional Engineer of the discipline required for specific service on the Project in the State in which the Project occurs, with five (5) years minimum experience, and meeting all applicable regulations of the State in which the Project occurs and Department of Labor, and other authorities having jurisdiction to perform the Work. To avoid any misunderstanding or lack of interpretation, the entity responsible for performing the Work of this Section shall be employed by the General Contractor, and the responsibility, including methods and means, is totally that of the General Contractor.
- D. Quality Control and Quality Assurance: Wherever the terms "Quality Control", "Quality Assurance" or any derivative thereof, or similar term appears in the Contract Documents, they mean one and the same, and shall mean an aggregate of activities of the General Contractor, such as design analysis and statistical sampling with inspection for defects, designed to ensure adequate quality in materials and workmanship whether factory manufactured or jobsite produced.

1.4 QUALITY CONTROL AND QUALITY ASSURANCE

- A. Employ a Construction Surveyor complying with the definition above and acceptable to the Owner and Architect, to perform all Construction Surveying. Provide full responsibility

for the Construction Surveyor and accuracy of the performance of all items of Work shown on Drawings, specified herein, or in other Specification Sections.

1.5 SUBMITTALS FOR REVIEW

- A. Submit name, address, telephone number, fax number, and registration number of the proposed Construction Surveyor prior to starting Work of this Section.
- B. Submit evidence of Construction Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate, if different from Construction Manager's.
- C. Upon request by Architect, submit documentation verifying accuracy of all Survey Work, including a certificate sealed and signed by the Construction Surveyor, that the elevations and locations of the Work are in conformance with Contract Documents and such information has been incorporated into the Project Record Documents.
- D. Submit Project Record Documents under provisions of Section 01 77 00, Closeout Procedures.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of discrepancies discovered.

3.2 SURVEY REFERENCE POINTS

- A. Locate and protect survey control and reference points.
- B. Control datum for survey is that established by the Owner provided survey and as indicated on Drawings.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original Owner's survey control. Make no changes without prior written permission of Architect.

3.3 FIELD ENGINEERING AND CONSTRUCTION SURVEYOR REQUIREMENTS

- A. Establish a minimum of two (2) permanent benchmarks, if required for construction work, on site, referenced to established control points. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Field Engineer shall establish elevations, lines and levels if required for construction work. Locate, lay out, and monitor by instrumentation and similar appropriate means Work, including, but not be limited to:

1. elevations, and layout of property lines and easements;
 2. site drainage, including storm water control and pollution prevention measures, slopes, swales, and invert elevations;
 3. limits of clearing and grubbing, including identification of trees and planting to be removed and methods for protection of those to remain;
 4. excavations, fill and topsoil placement, and all (rough and finish) grades;
 5. trenching and trench safety;
 6. utility locations;
 7. concrete and asphaltic concrete paving, curbs, ramps, and other site improvements, as applicable;
 8. grid or axis for structures, batter board locations;
 9. elevation, grade controls, and layout of building foundation and grade beams, column locations, base plates, embedded items, depressions, formwork, and openings in concrete, including all interior finish grades;
 10. elevations of structural steel, including, steel joists/trusses, steel decks, and associated miscellaneous metals;
 11. elevations and layout of masonry, including concrete masonry units (CMU), face brick, cast stone, and other elements built-in masonry.
 12. elevations and slopes of roofing, including those for lightweight insulating concrete deck system, if applicable.
 13. elevations and layout of work as required to ensure proper operation, clearances, and tolerances, including conveying systems, plumbing and mechanical work; and
 14. monitoring of movement and protection of existing or adjacent structures, as applicable.
- C. Throughout course of Work, verify existing conditions and layouts by same means as originally used to ensure conformance with design requirements and details. Notify Architect immediately, if discrepancies are found.
- D. Provide one (1) copy each of reduced Field Engineer's notes to the Architect, Owner, Construction Surveyor, and affected Consultant within four (4) working days of completion of each portion of the Field Engineering Work.
- E. Field Engineer's notes shall be clear and complete. The Field Engineer shall be available at no expense to the Owner, Architect, or Consultants for note interpretation, if required.
- F. Field Engineer shall perform surveys to determine quantities of unit cost work, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.
- G. Provide Construction Surveying services. Utilize recognized engineering survey practices.
- H. Construction Surveyor shall verify and record/document their findings, on a drawn survey at a scale matching that of the original Contract Documents, for the following:
1. All property lines and corners
 2. All building corners
 3. All paving corners
 4. Finish floor of all/each buildings
 5. Invert elevations, flow lines for all site drainage structures and improvements
- I. Payment for earthwork quantities shall be for materials in place, compacted, and determined by neat line method.

- J. Provide the Owner a reproducible hard copy and digital/electronic file copy of all the Construction Surveyor's work.

3.4 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and Field Engineer work as it progresses.
- B. Upon completion of Work, including, but not limited to earthwork, formwork, foundation, structural steel erection, and major site improvements, prepare Project Record Documents illustrating dimensions, locations, angles, and elevations of construction and site work.
- C. Submit Project Record Documents as specified in Paragraph 1.5.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

- A. Definition: "Cutting and Patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original undamaged condition, including original fire rating of fire rated construction.
 - 1. Cutting and patching is performed for coordination of the work for access or inspection, to obtain samples for testing, as indicated or required, to remove/replace defective work or work not conforming to the contract documents, to permit alterations to be performed, or for other similar purposes.
 - 2. Cutting and patching performed during the manufacture of products or during the initial fabrication, erection, or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".
- B. Refer to other Sections of these Specifications for specific cutting and patching requirements and limitations applicable to individual units of work.
 - 1. Unless otherwise specified, requirements of this Section also apply to mechanical and electrical work.

1.2 QUALITY ASSURANCE

- A. Visual requirements - Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Architect's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patchwork. Remove and repair or replace work judged by the Architect to be cut and patched in a visually unsatisfactory manner

1.3 RELATED WORK

- A. All Sections of Work requiring cutting and patching, including electrical requirements.

1.4 SUBMITTALS

- A. Procedural Proposal for Cutting and Patching - Where prior approval of cutting and patching is required, submit proposed procedures for this work well in advance of the time work will be performed and request approval to proceed. Include the following information, as applicable, in the submittal.
 - 1. Describe nature of the work and how it is to be performed, indicating why cutting and patching cannot be avoided. Describe anticipated results of the work in terms of changes to existing work, including structural, operational, and visual changes as well as other significant elements.
 - 2. List products to be used and firms including their qualifications that will perform the work. Also, provide cost proposals when applicable.
 - 3. Give dates when work is expected to be performed.
 - 4. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be disconnected or out-of service temporarily. Indicate how long utility service will be disrupted.

CUTTING AND PATCHING

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PART 2 - PRODUCTS

2.1 MATERIALS

- A. General - Except as otherwise indicated or as directed by Architect, use materials for cutting and patching that are identical to materials being cut and patched. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal or better performance characteristics.
 - 1. The use of trade name and supplier's name and address is to indicate a possible source of the material or product. Product of the same type from other sources shall not be excluded provided they possess like physical and functional characteristics, except where specified as no substitutions allowed or where a material or product is specified as the basis of specification and no other approved manufacturers are listed.
 - 2. Use materials, products, and devices to maintain integrity of fire rating of existing fire rated construction which comply with the requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before starting work, examine the surfaces to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.
 - 1. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict between the various trades. Coordinate layout of the work and resolve potential conflicts before proceeding with the work.
 - 2. After uncovering work, examine conditions affecting installation of product or performance of work.
 - 3. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.2 PREPARATION

- A. Provide temporary support to prevent failure of the work to be cut.
- B. Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions of that part of the Project that may be exposed during cutting and patching operations.
- C. Take precautions not to cut existing pipe, conduit, ducts, or wires serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General - Employ only skilled workmen to perform the cutting and patching work. Except as otherwise indicated or as approved by Architect, proceed with cutting and patching at the earliest feasible time and complete the work without delay.
- B. Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible, review proposed cutting and patching procedures with the original installer and comply with original installer's recommendations.

CUTTING AND PATCHING

01 73 29 - 2

1. In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
 2. Comply with requirements of other applicable sections where cutting and patching requires excavating and backfilling.
 3. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated, or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After by-passing and cutting, cap, valve, or plug and seal tight remaining portion of conduit and pipe to prevent entrance of moisture, vermin, or other foreign matter.
- C. Patching - Patch with seams which are durable and as invisible as possible. Comply with specified tolerance, if any, for the work.
1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
 2. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
 3. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor, wall, and ceiling surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings or materials, and ceiling finish materials and replace with new materials.
 - a. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coats.
 4. Patch, repair, or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.
 5. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through non-fire-rated floors and walls, and through finished surfaces.
- D. Fire Rated Construction - Where cutting and patching is necessary in existing fire rated construction, use sealant and other fire resistive materials, products, and devices as required and acceptable by the authorities having jurisdiction to repair, patch, and otherwise restore original fire rating and integrity of construction.

3.4 CLEANING

- A. Thoroughly clean area and spaces where work is performed or used as access to work. Remove completely: paint, mortar, cement, oils, putty, sealant, and items of similar nature. Thoroughly clean piping, conduit, and similar features before painting or other finishes are applied. Restore damaged pipe covering to its original undamaged condition.

END OF SECTION

SECTION 01 77 00

CLOSEOUT PROCEDURES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 PRE-CLOSEOUT MEETING

- A. Pre-Closeout Meeting: Schedule and convene Pre-Closeout Meeting with Owner and Architect in accordance with Section 01 31 19, Project Meetings.

1.2 SUBSTANTIAL COMPLETION

- A. The items listed in Document CB, Supplementary Conditions, Paragraph 9.8 and the following items shall be completed before Substantial Completion will be granted:
 - 1. Contractor's Completion List (Punch List): Submit a thorough list of items to be completed or corrected, along with a written request for Substantial Completion and for review of the Work or portion of the Work. The Architect/Engineer's Project Representative, at their discretion, may attend and assist in the preparation of the Contractor's Punch List.
 - 2. Architect's Supplemental Punch List: The Architect/Engineer, along with the Owner at the Owner's discretion, will inspect the Work utilizing the Contractor's prepared Punch List, noting completed items and incomplete items, and will prepare a supplemental list of items that have been omitted or incomplete items that were not previously noted.
 - 3. Operations and Maintenance Manuals: Submit as described in paragraph 1.3.
 - 4. Final Cleaning: Provide final cleaning and adequate protection of installed construction as described in paragraph 1.6 and 1.7.
 - 5. Starting of systems: Start up equipment and systems as described in paragraph 1.8.
 - 6. Testing and balancing: Testing and balancing of systems must be performed and completed by Owner's forces, and the report submitted and accepted by Architect/Engineer and Owner, as described in the Contract Documents. Make adjustments to equipment as required to achieve acceptance.
 - 7. Demonstrations: If required by individual specification sections or by Owner, provide demonstrations and instructions for use of equipment as described in paragraph 1.9.
- B. Date of Substantial Completion: Complete or correct items identified on Punch List and confirm that all items have been corrected prior to Architects re-inspection. Architect/Engineer, along with the Owner, will re-inspect the corrected work to establish the Date of Substantial Completion. Incomplete items remaining will be appended to the Certificate of Substantial Completion (AIA G704). The Date of Substantial Completion represents day one (1) of the closeout period, and represents the date of commencement of the Contractors correctional period and all warranty periods as described and required by the Contract Documents, except as amended in the Certificate of Substantial Completion and elsewhere in the Contract Documents.
- C. Certificate of Substantial Completion: When the Work or designated portion thereof is substantially complete, Architect will prepare the Certificate of Substantial Completion to be executed by the Owner and Contractor. Items on the appended Punch List shall be completed or corrected within the time limits established in the Certificate.

1.3 OPERATIONS AND MAINTENANCE MANUAL

- A. As a requirement for Substantial Completion, the final Operation and Maintenance Manual shall be submitted to, and reviewed and accepted by the Architect prior to issuance of the Certificate.
- B. Prepare 3-ring D-slant binder cover and spline with printed title "OPERATIONS AND MAINTENANCE MANUAL", title of project, and subject matter of binder when multiple binders are required.
- C. Submit one (1) copy of preliminary Operations and Maintenance Manuals to respective consultants (Civil, MEP, Structural, etc.) for review of conformance with contract requirements prior to submitting final to Architect. Allow time for proper review.
- D. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- E. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- F. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and Maintenance, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Equipment start-up instructions
 - e. Operating instructions.
 - f. Maintenance instructions for equipment and systems.
 - g. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Product data.
 - b. Air and water balance reports.
 - c. Photocopies of warranties, certificates and bonds. Submit originals with Closeout Documents as specified below.
- G. Submit one (1) final original and two (2) copies to Architect.

1.4 PROJECT CLOSEOUT

- A. Final Payment will not be authorized by the Architect until the Architect finds the Work acceptable under the Contract Documents, subject to the completion and acceptance of the following requirements and other applicable Contract requirements:
 - 1. Close-out Documents: Provide bound closeout documents as described in paragraph 1.5. Refer to Document CB, Supplementary Conditions, Paragraph 9.10 for additional information.
 - 2. Record Documents: Submit as described in paragraph 1.10.
 - 3. Extra materials: Provide extra stock, materials, and products as described in paragraph 1.11 when required by individual specification sections.

CLOSEOUT PROCEDURES

4. Locks: Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
5. Temporary Facilities: Discontinue and remove temporary facilities from the site, along with mockups, construction aids, and similar elements.
6. Warranties, Certificates and Bonds: Execute and assemble transferable warranty documents, certificates, and bonds from subcontractors, suppliers, and manufacturers as described in paragraph 1.12.
7. Final Inspection and Acceptance by Architect is achieved as described in paragraph 1.13.

1.5 CLOSEOUT DOCUMENTS

- A. Coordinate the following items with the requirements of Document CB, Supplementary Conditions of the Contract.
- B. Prepare 3-ring D-slant binder cover and spline with printed title "CLOSEOUT DOCUMENTS", title of project, and subject matter of binder when multiple binders are required. Submit one (1) original and two (2) copies.
- C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. The close-out documents shall be neatly organized and easily useable as determined by the Architect and Owner. Separate Close-out Documents binders from Operations and Maintenance Manuals. Documents identified as "affidavit" shall be notarized.
- E. Contents: Prepare Table of Contents for each volume, with each item description identified, typed on white paper, in five (5) parts as follows:
 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers. All General Contractor's vendors/suppliers and subcontractors that provided materials or performed any work related to this project must be listed on this form. Submit Final List of Subcontractors on Document AG.
 2. Part 2: Closeout Documents and Affidavits, include the following:
 - a. AIA G707 - Consent of Surety to Final Payment;
 - b. AIA G706 - Contractor's Affidavit of Payment of Debts and Claims;
 - c. AIA G706A - Contractor's Affidavit of Release of Liens;
 - d. Subcontractor's Release of Lien: Include contractor's, subcontractor's and direct material and equipment supplier's separate final releases. Submit on attached **Close-out Form "A"** - Affidavit of Subcontractor's Release of Lien.
 3. Part 3: Project documents and certificates, including the following:
 - a. Copy of Certificate of Substantial Completion (AIA G704);
 - b. Copy of All Permits;
 - c. Copy of Final Utility Bill or letter of transfer;
 - d. Copy of Certificate of Occupancy;
 - e. Certification of Project Compliance: Submit on attached **Close-out Form "B"**. Owner and Architect will initiate form and forward to Contractor for signature once Substantial Completion is established;
 - f. Hazardous Material Certificate: Submit on attached **Close-out Form "C"**. Affidavits from Contractor, Subcontractors and General Contractor's vendors or suppliers stating that no hazardous materials/products have been used or installed in this project.
 4. Part 4: Warranties, compile sequentially based on specification sections:
 - a. General Contractor's Warranty: Submit on company letterhead as described below. This Warranty shall state all sections of Work

CLOSEOUT PROCEDURES

- performed by General Contractor's own forces, and warranty period for each section of Work;
- b. Subcontractor's Warranty: notarized, and submitted on attached **Close-out Form "D"**. This Warranty shall state all sections of Work performed by the subcontractor and warranty period;
- 5. Part 5: Receipts:
 - a. Extra Stock: Provide original receipts for delivery of "Extra Stock" items as described below, (if applicable). Receipts must be signed by an authorized Owner's representative;
 - b. Keys: Provide original receipts for delivery of "Keys", (if applicable). Receipts must be signed by an authorized Owner's representative.
- F. In addition to the three (3) required close-out binders listed above, provide Architect with one (1) separate binder for their records containing the following:
 - 1. Directory, listing names, addresses, and telephone numbers of Architect / Engineer, Contractor, Subcontractors, and major equipment suppliers;
 - 2. all MSDS sheets for the project;
 - 3. all warranties from Contractor, subcontractors, direct suppliers, and manufacturers.
- G. Failure to complete and close-out project after substantial completion may result in liquidated damages being assessed to the Contractor. Refer to Conditions of the Contract for additional requirements and liquidated damages.

1.6 FINAL CLEANING

- A. Execute final cleaning prior to final project inspection and acceptance.
- B. Clean interior and exterior glass, and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces, mop hard floor surfaces.
- C. Remove smudges, marks, stains, fingerprints, soil, dirt, spots, dust, lint, and other foreign materials from finished and exposed surfaces
- D. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- E. Clean and replace filters of operating equipment as required by Contract Documents
- F. Clean debris from roofs, gutters, downspouts, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste and surplus materials, rubbish, and temporary construction facilities from site.

1.7 PROTECTING INSTALLED CONSTRUCTION

- A. Protect installed Work and provide special protection where specified in individual specification sections until Work is accepted by Architect and Owner.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic from landscaped areas.

1.8 STARTING OF SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect/Engineer and Owner 48 hours prior to start-up of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of Contractors' personnel, and installer in accordance with manufacturers' instructions.
- G. When specified in individual specification sections or required by manufacturer, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. When specified in individual specification sections or required by Owner or Architect/Engineer, submit a written report in accordance with Section 01300, Submittal Procedures, that equipment or system has been properly installed and is functioning correctly.

1.9 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel a minimum of 48 hours prior to date of Final Completion in accordance with Owner's requirements.
- B. Demonstrate Project equipment instructed by qualified manufacturer's representative who is knowledgeable about the Project and equipment.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six (6) months.
- D. Utilize maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment.

- F. Prepare and insert additional data in maintenance manuals when need for additional data becomes apparent during instruction.
- G. Review and verify proper start-up and operation of equipment prior to scheduling demonstrations with Owner.

1.10 PROJECT RECORD DOCUMENTS

- A. Record Documents, as described in Section 01 78 39, shall be submitted at Project Closeout. Final Payment will not be authorized by the Architect until final review and acceptance by Architect and Engineers is achieved in accordance with the Owners requirements.
- B. At the Contractors request, and with associated fee, Architect may provide electronic versions of the construction drawing and specification files for Contractors use, subject to the terms and conditions of Architects standard electronic document transfer agreement.
- C. Submit reproducible to respective consultants, if any (Civil, Structural, MEP, *etc.*) for review. Consultant will mark-up corrections and return to Contractor for final revisions. Make final revisions prior to submitting to Architect.
 - 1. Format: One (1) set of film positive reproducible and two (2) sets of blacklines of approved reproducible.
 - 2. In addition, provide the Owner with one (1) set of Record Drawings on a non-rewritable CD in AutoCAD® latest release.

1.11 EXTRA STOCK, MATERIALS AND MAINTENANCE PRODUCTS

- A. Furnish extra stock, maintenance, and extra products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed by Owner; obtain signed receipt from Owner's authorized representative prior to final application for payment. Delivery of materials to, or obtaining receipt from anyone other than Owner's authorized representative may constitute breach of this requirement and may require delivery of additional materials at no cost to the Owner if original materials are misplaced.
- C. Include signed receipts for delivery of extra stock and materials, including keys, with Closeout Documents.

1.12 WARRANTIES, CERTIFICATES AND BONDS

- A. Definitions:
 - 1. Standard Product Warranties: preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
 - 2. Special Warranties: written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide coverage of specific defects, or both.
- B. In accordance with the general warranty obligations under Paragraph 3.5 of the General Conditions as amended by the Supplementary Conditions, the General Contractor's warranty shall be for a period of one (1) year following the date of Substantial Completion, hereinafter called the one-year warranty period. The Contractors one-year general warranty shall include all labor, material and delivery costs required to correct defective material and installation. This warranty shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

- C. The Contractor's one-year warranty shall run concurrently with the one (1) year period for correction of Work required under Paragraph 12.2 of the General Conditions.
- D. In addition to the Contractor's one-year warranty, Special Warranties as described in individual specifications sections, shall extend the warranty period for the period specified without limitation in respect to other obligations which the Contractor has under the Contract Documents.
- E. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve the suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
- F. Warranty Requirements:
 - 1. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
 - 2. When Work covered by a warranty has failed and been corrected by replacement or reconstruction, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
 - 3. Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
 - 4. Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 5. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or designated portion of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. Compile copies of each required warranty properly executed by the Contractor and the subcontractor, supplier, or manufacturer. Verify documents are in proper form, contain full information, and are notarized. Co-execute warranties, certificates and bonds when required and include signed warranties with Closeout Documents submitted to the Architect.
- H. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1.13 FINAL COMPLETION AND FINAL PAYMENT

- A. Final Notice and Inspection:
 - 1. When all items on the Punch List have been corrected, final cleaning has been completed, and installed work has been protected, submit written notice to the Architect that the Work is ready for final inspection and acceptance.
 - 2. Upon receipt of written notice that the Work is ready for final inspection and acceptance, the Architect and Engineer will make final inspection.

- B. Final Change Order: When the Project Closeout items described above are successfully completed and the Work is found acceptable to Architect/Engineer and Owner, a Final Change Order will be executed. This Change Order will include any Allowance adjustments as required by the Contract Documents.
- C. Final Application for Payment: When all of the above items are successfully complete, submit to the Architect a final Application for Payment and request for release of retainage.
- D. Release of Retainage: Release of retainage will not be authorized by the Architect until Contractor completes all requirements for close-out to the satisfaction of the Owner and Architect as described herein.

1.14 TERMINAL INSPECTION

- A. Immediately prior to expiration of the one (1) year period for correction of the Work, the Contractor shall make an inspection of the work in the company of the Architect and the Owner. The Architect and the Owner shall be given not less than ten (10) days notice prior to the anticipated date of terminal inspection.
- B. Where any portion of the work has proven to be defective and requires replacement, repair or adjustment, the Contractor shall immediately provide materials and labor necessary to remedy such defective work and shall execute such work without delay until completed to the satisfaction of the Architect and the Owner, even if the date of completion of the corrective work may extend beyond the expiration date of the correction period.
- C. The Contractor shall not be responsible for correction of work which has been damaged because of neglect or abuse by the Owner nor the replacement of parts necessitated by normal wear in use.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

CLOSE-OUT FORM "A"

SUBCONTRACTOR'S AFFIDAVIT OF RELEASE OF LIEN

STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says:

1. That he / she is the _____ of _____, the subcontractor who supplied, installed, and /or erected the work described below, and that, he /she is duly authorized to make this Affidavit and Subcontractor Release:

Project: Hidden Valley Elementary School Re-Roofing Package

Owner: Santa Rosa City Schools

Architect: PBK

Work Performed: _____ Specification Section(s): _____

2. That all work required under the subject subcontractor of the subject construction project has been performed in accordance with the terms thereof, that all material men, sub-subcontractors, mechanics, and laborers have been paid and satisfied in full and that there are no outstanding claims of any character arising out of the performance of said subcontractor which have not been paid and satisfied in full.
3. That to the best of his / her knowledge and belief, there are no unsatisfied claims for damages resulting from injury or death to any employees, sub-subcontractors, or the public at large arising out of the performance of said subcontract, or any suits or claims for any other damages of any kind, nature, or description which might constitute a lien upon the property of the Owner.
4. That he / she has received full payment of all sums due him / her for materials furnished and services rendered by the undersigned in connection with the performance of said subcontract and has and does hereby release the Owner and the Architect and his consultants and the Contractor from any and all claims of any character arising out of or in any way connected with performance of said subcontract.

ATTEST (If Corporation)

Name of Subcontractor

Secretary

(By)

(Title)

JURAT

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 20_____.

(Seal)

(Notary Public Signature)

CLOSEOUT PROCEDURES

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CLOSE OUT FORM "B"

**CERTIFICATION
OF PROJECT
COMPLIANCE**

Completion of this form is required under the provisions of §61.1036(c)(3)(F) TAC for all public school district construction projects. Instructions for completion of this form can be found on page 2.

1. PROJECT INFORMATION

Facility:

Address:

City:

DISTRICT:

ARCHITECT / ENGINEER:

CONTRACTOR / CM:

CONTRACT DATE:

DATE DISTRICT AUTHORIZED PROJECT:

BRIEF DESCRIPTION OF PROJECT:

2. CERTIFICATION OF DESIGN AND CONSTRUCTION

The intent of this document is to assure that the school district has provided to the architect/engineer the required information and the architect/engineer has reviewed the School Facilities Standards as required by the State of California, and used his/her reasonable professional judgment and care in the architectural / engineering design and that the contractor has constructed the project in a quality manner in general conformance with the design requirements and that the school district certifies to project completion.

3. The District certifies that the educational program and the educational specifications of this facility along with the identified building code to be used have been provided to the architect/engineer.

DISTRICT:

BY:

DATE:

4. The Architect / Engineer certifies the above information was received from the school district, and that the building(s) were designed in accordance with the applicable building codes. Further, the facility has been designed to meet or exceed the design criteria relating to space (minimum square footage), educational adequacy, and construction quality as contained in the School Facilities Standards as adopted by the Commissioner of Education, June 9, 2003, and as provided by the district.

ARCHITECT / ENGINEER:

BY:

DATE:

5. The Contractor/CM certifies that this project has been constructed in general conformance with the construction documents as prepared by the architect/engineer listed above.

CONTRACTOR / CM:

BY:

DATE:

6. The District certifies completion of the project (as defined by the architect / engineer and contractor).

DISTRICT:

BY:

DATE:

INSTRUCTIONS FOR COMPLETION OF "CERTIFICATION OF PROJECT COMPLIANCE" FORM

Section 1. Identify the following:

- name and address of the school facility
- name of the school district
- the Architect / Engineer and Contractor
- the date of execution of the construction contract
- the date that the school district authorized the superintendent to hire an architect / engineer
- scope of the project.

Section 2. This section outlines the intent of the document. No action required.

Section 3. This section is to be executed by the school district upon transmittal of the information (as listed) to the architect / engineer and is to remain in the custody of the school district throughout the entire project.

Section 4. This section is to be executed by the architect / engineer upon completion of the plans and specifications and in conjunction with the completion of the plan review for code compliance (ref. 19 TAC §61.1033 or §61.1036, School Facilities Standards) and returned to the school district's files.

Section 5. This section is to be executed by the contractor upon substantial completion of the project and retained in the school district's files.

Section 6. This section is to be executed by the school district upon acceptance and occupancy of the project.

NOTE: DO NOT SUBMIT THIS DOCUMENT TO THE CALIFORNIA DIVISION OF THE STATE ARCHITECT. The school district will retain this document in their files indefinitely until review and/or submittal is required by representatives of the DSA.

CLOSE-OUT FORM "C"

SUBCONTRACTOR HAZARDOUS MATERIAL CERTIFICATE

THE STATE OF _____ PROJECT: Hidden Valley Elementary School Re-Roofing
COUNTY OF _____ OWNER: Santa Rosa City Schools
ARCHITECT: PBK
SPECIFICATION SECTION(S):

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says that he / she
is the _____ of _____, the subcontractor / supplier
who constructed or provided the section(s) of work referenced above, and that he / she is duly authorized
to certify to the best of his / her information, knowledge, and belief no asbestos, lead or PCB containing
products have been incorporated into the project.

ATTEST (If Corporation)

Name of Subcontractor / Supplier

Secretary

(By)

(Title)

JURAT

THE STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 20____.

(Seal)

(Notary Public Signature)

CLOSE-OUT FORM "D"

SUBCONTRACTOR WARRANTY

STATE OF _____

COUNTY OF _____

KNOW ALL MEN BY THESE PRESENTS:

_____, being first duly sworn, deposes and says:

1. That he / she is the Subcontractor (or the _____ of _____ the subcontractor) who supplied, installed, and / or erected the work described below, and that, he / she is duly authorized to make this Subcontractor Warranty:

Project: 2014 Roofing Package at Tennyson Middle School

Owner: Twin Rivers Unified School District Architect: PBK

Work Performed: _____ Specification Section(s): _____

2. The undersigned Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract are of good quality and new except where otherwise required or permitted by the Contract Documents, that the Work is free from defects not inherent in the quality required or permitted, and that the Work conforms with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Subcontractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Subcontractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage.
3. In the event of failure of materials, products, or workmanship, during the specified warranty periods, the Subcontractor shall take appropriate measures to assure correction or replacement of the defective items, whether notified by the Contractor, Owner or Architect.
4. The Subcontractor warrants the work performed for a period of _____ months from the date of Substantial Completion, except as follows: _____

ATTEST (If Corporation)

Name of Subcontractor

Secretary

(By)

(Title)

JURAT

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 20_____.

(Seal)

(Notary Public Signature)

SECTION 01 78 39

PROJECT RECORD DOCUMENTS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Architect's / Engineer's written responses to Minor Change directives, Change Proposal Requests, and other supplemental instructions.
 - 5. Change Orders and other modifications to the Contract.
 - 6. Reviewed Shop Drawings, Product Data, and Samples.
 - 7. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner. Architect will review documents for general conformance but will not be responsible for completeness or accuracy of the recorded information.
- C. Do not use record documents for construction purposes. Store record documents separate from documents used for construction. Protect record documents from deterioration and loss in a secure, weather-tight location in accordance with Section 01 50 00, Temporary Facilities.
- D. Record information concurrent with construction progress, not less than weekly. Provide access to record documents for Architect's reference during normal working hours.
- E. Give particular attention to information on concealed products and installations that would be difficult to identify or measure and record later.
- F. Mark record sets in red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
 - 1. Mark important additional information which was either shown schematically or omitted from original Documents.
 - 2. Note construction change directive numbers, alternate numbers, Change Order numbers and similar identification.
 - 3. Where feasible, the individual or entity who obtained record data, whether the individuals or entity is the installer, subcontractor, or similar entity, is required to prepare the mark-up on record documents.
 - a. Accurately record information in an understandable drawing technique.
 - b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
 - 4. Sign or initial and date each mark-up.
- G. Upon completion of the Work, submit Project Record Documents to Architect for the Owner's records in accordance with Section 01 77 00, Closeout Procedures.

PROJECT RECORD DOCUMENTS

1.2 RECORD SPECIFICATIONS

- A. Record Specifications: Maintain one complete copy of the Project Manual including addenda and modifications issued. Legibly mark and record at each product section a description of actual products installed and variations in actual Work performed in comparison with products specified. Include the following:
1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by addenda and modifications.
 4. Related record drawing information and Product Data.
 5. Other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

1.3 RECORD DRAWINGS

- A. Record Drawings: Maintain one complete blackline copy of the Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies from the Work as originally shown.
1. Legibly mark each item to record actual construction including, but not limited to the following:
 - a. Measured depths of foundations in relation to project finish floor datum.
 - b. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - c. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - d. Field changes of dimension and detail.
 - e. Details not on original Contract drawings.
 - f. Revisions to details shown on the drawings.
 - g. Dimensional changes to the drawings.
 - h. Actual equipment locations.
 - i. Duct size and routing.
 - j. Changes made by Change Order; include change order number.
- B. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions. Where Shop Drawings are marked to reflect changes in the Work, record a cross-reference at the corresponding location on the Contract Drawings.
- C. Preparation of Transparencies: Prepare a full set of corrected reproducible Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.
 2. Remove Architects and Engineer's seal from drawings and specifications prior to issuance to Architect for approval.
 3. Refer instances of uncertainty to the Architect for resolution.

1.4 RECORD PRODUCT DATA

- A. Maintain one copy of each Product data submittal for record document purposes. Mark Product Data to indicate the actual product installation. Include significant changes in the product delivered to the site, and changes in manufacture's instructions and recommendations for installation.

1.5 RECORD SAMPLE SUBMITTAL

- A. Immediately prior to date of Substantial Completion, meet with the Architect, and Owner, at the Owner's discretion, at the site to determine which of the Samples maintained during the construction period shall be transmitted to Owner for record purposes. Comply with the Architect's instructions for packaging, identification marking, and delivery to Owner's Sample storage space. Dispose of other Samples in manner specified for disposal of surplus and waster materials.

1.6 MISCELLANEOUS RECORD DOCUMENTS

- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Categories of requirements resulting in miscellaneous records, include, but are not limited to the following:
1. Ambient and substrate condition tests.
 2. Changes requested by Owner's consultants.
 3. Inspections and certifications by governing authorities.
 4. Inspection and testing by Owner's inspection agency.
 5. Fire resistance and flame spread test results.

1.7 CERTIFICATION

- A. By submittal of Project Record Documents, Contractor certifies, that to the best of his knowledge, informational and belief the documents are a true and complete representation of the actual construction of the Work of this Project.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 02 41 13

SELECTIVE DEMOLITION

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Partial demolition of existing building as required to accommodate additions and renovations as shown on the drawings or required. Include removal of existing utilities as indicated or encountered; removal of masonry, and mechanical, electrical, and plumbing items as indicated or required.

1.2 SUBMITTALS

- A. Submit the following items.
 - 1. Itemized Demolition Schedule.
 - 2. Detail all demolition methods to be used.

1.3 PERMITS

- A. Procure and pay for all necessary permits or certificates required to complete the work specified. Make any and all required notifications and comply with all applicable Federal, State and local ordinances.

1.4 QUALITY ASSURANCE

- A. Provide at least one (1) person who shall be present and in charge of the Demolition Work at all times and who shall be thoroughly familiar with all phases of all work performed under this Section.
- B. Comply with all pertinent codes and regulations applying to this work.

1.5 JOB CONDITIONS

- A. Use all means necessary to prevent the spread of dust during performance of this work. Provide additional clean filters for the existing air handling system serving those areas to remain to protect them from construction dust.
- B. Use all means necessary to protect the existing building to remain from all types of damage, including fire, water damage, and unnecessary interruption of utility services. In the event of damage of any kind, immediately make all repairs and replacements necessary to the approval of the Owner at no additional cost to the Owner.
- C. Motor driven equipment shall have functional mufflers.
- D. Visit the site and examine the existing structure. Note all conditions as to the character and extent of work involved.

1.6 PRE-INSTALLATION CONFERENCE

- A. Refer to Section 01 31 13 - Notification of Architect requirements.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide all barricades, shoring, and bracing necessary to protect the tenants, workmen, and Public from danger. Barricades shall be sufficiently designed to protect and or exclude the public from all hazards.
- B. All other materials, not specifically described but required for proper completion of Work of this Section, shall be as selected by the Contractor subject to the approval of the Owner.

2.2 DEMOLITION WORK

- A. Perform demolition work in manner so as to allow Owner's safe use of existing facility.
- B. Perform demolition work in order to maintain Owner's construction schedule.

2.3 REMOVAL OF PARTITIONS, COLUMNS AND STRUCTURE (IF REQUIRED)

- A. Masonry walls or other sections of masonry shall not be permitted to fall on floors of building in masses to exceed safe carrying capacity of floors. Existing floors shall be properly protected with plywood on both sides of a partition to be demolished.
- B. Provide temporary shoring or bracing wherever necessary for the protection of occupants, workmen, walls, partitions, roofs, floors and structure to remain.
- C. Structural or load-supporting members shall not be cut or removed adjacent to existing structures to remain until all loads carried by members have been removed or adequately supported.
- D. No masonry walls shall be removed until it has been determined that the walls to be removed do not support the roof. To determine this, all adjacent materials such as finish ceilings shall be removed to provide adequate views of existing structure. Provide temporary shoring as needed. The Contractor shall take all precautions necessary to ensure the safety of the demolition workers and all occupants of the building.
- E. No demolition will be allowed above, below, adjacent to or near any occupied areas of the building.
- F. Where access holes in existing ceilings or removal of existing ceilings are required, minimize the access in order to minimize the repair work and repair or replace removed or damaged work to match adjacent undamaged work.
- G. Cut and tooth new openings in masonry where required, of correct size to permit installation of added building components.

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Before commencing the Work of this Section, verify with the Owner that all items to be removed by the Owner have been removed. Schedule the work in a careful manner with all necessary consideration for the Public and the Owner. All items of existing equipment

and materials or any other item of value to the Owner shall be salvaged by the Owner prior to demolition.

- B. All material removed under this Contract, which is not to be salvaged or reused, shall become the property of the Contractor and be promptly removed from the site. At all times use movable debris boxes, covered, to convey the material through the building. Do not store or permit debris to accumulate on the site. Dumpsters shall not overflow and shall be emptied on a regular basis. Remove all debris from the building premises and leave the construction site "Clean" each day. All debris shall be dumped in an approved disposal facility and all fees for this shall be paid by the Contractor. Contractor is responsible for completely removing all demolished materials from the site and disposing of them in accordance with all local, State and Federal Regulations. If Contractor fails to remove debris promptly, Owner reserves the right to have debris removed at Contractor's expense.
- C. Conduct operations so as not to interfere with adjacent occupied spaces, roads, streets, drives, walks, service lines and the like.
- D. Keep all pedestrian areas clear for passage at all times.

3.2 PROTECTION OF STRUCTURES, PROPERTY

- A. Execute demolition work to ensure adjacent property no damage from falling debris or other causes.
- B. Take precautions to guard against movement, settlement, or be liable for such movement, settlement, or collapse; repair promptly such damage when so ordered.
- C. Repair damage to Owner's property or any other person or persons on or off premises by reason of required work.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. All rough carpentry items including, but not limited to:
 - 1. Wood blocking for support of items supported on or recessed into wood framing or requiring wood blocking for support.
 - 2. Wood cants, nailers, curbs, and other items associated with roofing work.
 - 3. Miscellaneous framing items and plywood sheathing.

1.2 RELATED WORK

- A. All Sections of Work supported on or recessed into wood framing or requiring wood blocking for support, such as wall trim, wall cabinets, handrails, lockers, toilet compartments, toilet and bath accessories, markerboards, tackboards, projection screens, fire extinguisher cabinets, etc., as applicable to the Project.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data on wood treatment materials.

1.4 STANDARDS AND GRADING

- A. All lumber used structurally shall be graded and marked with grade and trademark of a lumber grading organization approved by the Architect, except that a certification of grade from such a grading organization may be accepted in lieu of grade and trademarks when approved by Architect. Trademark of manufacturer shall also appear on each piece.
- B. Each piece of plywood used structurally shall carry the American Plywood Association trademark.
- C. Grading Rules: Conform with all applicable requirements of American Lumber Standards "Simplified Practice Recommendations R-16" and to grading rules of manufacturer's association under whose rules the lumber is produced.
- D. Reference Standards: Conform with all requirements.
 - 1. U.S. Dept. of Commerce Product Standards (PS)
 - 2. American Plywood Association (APA)
 - a. Standards and Construction Guide
 - 3. American Wood Preservers Association (AWPA)
 - a. Standards, as they apply.
 - 4. Architectural Woodwork Institute (AWI)
 - a. "Quality Standards"
 - 5. National Woodwork Manufacturers' Association (NWMA)
 - a. Standards
 - 6. Western Wood Products Association (WWPA)
 - a. Manual

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber:

1. Treated No. 2, S4S Southern Yellow Pine, #1 kiln dried.
 - a. Comply with NWMA Standards
 - b. Use for blocking, stripping, grounds, cants and miscellaneous wood items in contact with concrete, roofing, or exposed to the weather.
2. No. 2, S4S Southern Yellow Pine: Use for framing, blocking, stripping and miscellaneous concealed interior lumber not exposed to concrete, roofing weather or moisture, when FRS lumber is not required by building code.
3. Fire Retardant No, 2, S4S Southern Pine: Refer to Fire Retardant Treatment below. Use for framing, plates and blocking in all walls and partitions where required by building code or noted on drawings.

B. Plywood:

1. General: Comply with APA Standards.
2. APA A-D, Group 1 Interior used where appearance of only one side is exposed to view for interior locations. Use for wall liner at MDF/IDF closets and telephone boards in mechanical and telephone rooms where shown or required. 3/4 inch thick unless required or shown otherwise. Paint as scheduled in Section 09 91 00.
3. Exterior plywood, Group 1, APA rated sheathing. Use where miscellaneous plywood is exposed to concrete, weather, or at roof construction as sheathing.
4. Fire Retardant Treated Plywood: Refer to Fire Retardant Treatment below. Use when required by building code or noted on drawings.
5. Underlayment: If shown or required, APA rated Sturdi-floor, exterior grade, tongue and groove edges.

C. Rough Hardware:

1. Nails, Spikes, and Staples: Galvanized for exterior locations, high humidity locations, and treated wood; plain finish for other interior locations: Size and type to suit application. Do not use to resist "pull-out" loads.
2. Bolts, Nuts, Washers, Lags, and Screws: Medium carbon steel; size and type to suit application. Galvanize for exterior locations, high humidity locations, and treated wood. Plain finish for other interior locations.
3. Fasteners: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry and concrete. Bolts or power activated type for anchorage to steel.

D. Wood Treatment:

1. Preservative Treatment (Concealed Conditions):

- a. Micronized Copper Quaternary (MCQ): Pressure impregnate preservative to net retention of 0.25 lbs./cu.ft., in plant licensed by manufacturer in accordance with the following standards:
 - 1) Preservative Treatment Standard: AWP A P5
 - 2) Structural Lumber Treatment Standard: AWP A C31
 - 3) Plywood Treatment Standard: AWP A C9
- b. Brush two (2) coats of preservative on bored or sawn surfaces of treated lumber.
- c. Provide Quality Mark Stamp on treated wood for identification.
- d. Fasteners: Metal fasteners in contact with preservative treated wood shall be G-90 galvanized, minimum, or stainless steel in accordance with manufacturer's instructions. No uncoated steel shall come in contact with preservative wood.

ROUGH CARPENTRY

06 10 00 - 2

- e. ACQ and CCA preservatives not permitted.
- f. Acceptable Manufacturers: Osmose "MicroPro" Smart Sense; or Architect approved equal.

2. Fire Retardant Treatment:

- a. Lumber shall be pressure-impregnated with non-combustible fire retardant chemicals in accordance with U.L. FRS Fire Hazard Classification. All lumber must be dried following treatment in accordance with AWP Standard C20.
- b. Plywood shall be pressure-impregnated with non-combustible fire retardant chemicals in accordance with U.L. FRS Fire Hazard Classification. All plywood must be dried following treatment in accordance with AWP Standards C27.

PART 3 - EXECUTION

A. Wood Framing:

- 1. Framing and blocking shall be accurately cut and fitted true to line and levels, avoiding shims and wedges.
- 2. Spiking and nailing shall be done using largest size spikes and nail practicable.
- 3. Unless otherwise shown, use 2 inch by 4 inch wood studs spaced 16 inches o.c. with 4 inch face perpendicular to direction of wall or partition. Provide single bottom plate and double-top plates 2 inches thick by width of studs.
- 4. Bolt nailers and blocking to steel, masonry or concrete members with bolts or proportionate strength of members attached from each end, except as otherwise noted on plans.
- 5. Provide blocking, bucks and framing as necessary and for other trades as required.
- 6. Drill lumber accurately for bolts and fit all bolts with suitable washers.
- 7. Perimeter wood blocking to be attached 2'-0" staggered with 1/2" galvanized bolts through both nailers.
- 8. Screws are to be used for perimeter edge nailers. No nailing permitted.

B. Plywood:

- 1. Install plywood over framing in accordance with instruction of American Plywood Association Construction Guide Form No. E30C.
- 2. Install underlayment plywood as shown in accordance with instructions of American Plywood Association. Space panel joints and edges 1/32 inch. Fill and sand panel edge joints, surface roughness, and damaged or open areas. Nail with 4d ring-shank nails spaced at six (6) inches at edges and eight (8) inches in field each way.

END OF SECTION

SECTION 07 31 13

ASPHALT SHINGLE ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Provide all labor, equipment, and materials to install asphalt shingle roof system over the properly prepared substrate.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.
- B. Coordinate with related work specified elsewhere:
 - 1. Division 6 Section "Rough Carpentry" for wood blocking and nails.
 - 2. Division 7 Section "Flashing and Sheet Metal."

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. D41, Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
 - 2. D3462 Standard Specification for Asphalt Shingles Made From Glass Felt and Surfaced With Mineral Granules.
 - 3. D451, Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products
 - 4. D1079, Terminology Relating to Roofing, Waterproofing, and Bituminous Materials
 - 5. D1227, Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
 - 6. D1863, Specification for Mineral Aggregate Used on Built-Up Roofs
 - 7. D2178, Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
 - 8. D2822, Specification for Asphalt Roof Cement
 - 9. D2824, Specification for Aluminum-Pigmented Asphalt Roof Coating
 - 10. D3019, Specification for Lap Cement Used with Asphalt Roll Roofing
 - 11. D4601, Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
 - 12. D5147, 1991 Test Method for Sampling and Testing Modified Bituminous Sheet Materials
 - 13. E108, Test Methods for Fire Test of Roof Coverings
- B. ASCE-7 Wind uplifts requirements for geographical area.
- C. Federal Specifications (FS)
 - 1. TT-S-00230C
- D. National Roofing Contractors Association (NRCA)
 - 1. Roofing and Waterproofing Manual
- E. Single Ply Roofing Institute (SPRI)

- F. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
 - 1. Architectural Sheet Metal Manual
- G. Underwriters' Laboratories (UL)
 - 1. Fire Hazard Classifications
 - 2. Class 90-wind uplift.
- H. California Building Code (CBC)

1.4 SUBMITTALS

- A. Provide the following to the Owner prior to award of roofing work.
 - 1. Written certification from the roofing system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified roofing system.
 - 2. Descriptive product data including MSD sheets.
 - 3. Certification of Class A roof system.
 - 4. Sample copy of contractor's workmanship warranty.
 - 5. Sample copy of specified Manufacturer's warranty.
 - 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. PRODUCT DATA: Submit brochures containing material samples, SDS, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
 - 1. Within four (4) weeks of award of contract, submit:
 - a. Minimum of two (2) samples of each sheet material and descriptive literature.
 - b. Manufacturer's specifications and other independent test data needed to prove compliance with specified requirements.
 - c. All other data and information to satisfy requirements of manufacturer on warranty needs.
 - d. A written statement from the roofing materials manufacturers corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
 - e. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
 - f. Certified copy of ISO 9001 compliance.
- C. SHOP DRAWINGS: Indicate size and materials. Show locations and installation procedures. Include details of joints, attachments, fastening patterns, and clearances. Submit 1 electronic original and retain approved copies at the Site.
- D. MAINTENANCE PROCEDURES: Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturer's printed instructions regarding care and maintenance of roof.
- E. Wind uplift calculation: underlayment manufacturer's engineering department shall provide a ASCE 7-10 calculation per CBC, Chapter 15. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for insulatin attachment.
- F. Plumbing calculation: underlayment system manufacturer's engineering department shall provide a primary drain and overflow drain or overflow scupper calculation per CBC, Chapter 11. Calculations shall be stamped by a CA licensed mechanical engineer.
- G. Structural wind load calculation: underlayment manufacturer's engineering department shall provide a ASCE 7-10 calculation per CBC, Chapter 16.

Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for structural deck attachment.

1. Manufacturer shall provide on site verification structural deck meets loading requirements after roof have been removed.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Roofing system manufacturer shall have a minimum of 10 years experience in manufacturing modified bitumen roofing products in the United States and be ISO 9001 certified.
- B. Installer Qualifications: Installer (Roofing) shall be specializing in modified bituminous roof application with minimum 5 years experience and who is certified by the roofing system manufacturer as qualified to install manufacturer's roofing materials.
 1. Installer shall be California C-39 licensed.
 2. Install shall have an office with 100 miles of the District office in order to provide prompt leak response during contractor warranty period.
- C. Regulatory Requirements:
 1. Classification by Underwriters' Laboratories, Inc. as a Class A roof covering.
 2. Roofing system shall be installed in accordance with ASCE-7 wind uplift requirements for geographical location and a 120 MPH 3-second gust wind speed zone with an importance factor of 1.15 based on IBC requirements. Wind-resistance loads listed below have a safety factor of 2.0 incorporated into the calculation.
 3. Follow local, state, and federal regulations of safety standards and codes. Refer to applicable building code or International Building Code for roofing system installation requirements and limitations.
- D. Installer's Field Supervision: Require Installer to maintain a full-time Supervisor/Forman on job site during all phases of roofing work and at any time roofing work is in progress, proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen and on the roof at all times.
- E. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction.
- F. Disqualification of Bidders: A bidder can be disqualified by the Architect or Owner for any of the following reasons, but not limited to:
 1. The failure to attend the Pre-Bid conference at the time and place so described under Bidding Dates.
 2. Incorrect use of the "Proposal" as provided by the Architect/Owner. Any changes in said format shall be accepted by the Architect/Owner only when requested and approved in writing prior to the bid opening. Changes in the Proposal after the opening of the bids will not be accepted.
 3. Lack of proficiency as shown by past work or incomplete work under other contracts which, in the judgement of the Architect/Owner might hinder or prevent the prompt completion of additional work if so awarded or any involvement in any legal actions which relate to past or present performance. This includes, but is not limited to lawsuits, court appointed actions, and/or ongoing litigation.

- G. Pre-installation Roofing Conference: Approximately 2 weeks before scheduled of commencement roof system and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing that must precede or follow roofing work (including mechanical work if any), Architect/Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:
1. Review foreseeable methods and procedures related to roofing work. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
 2. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 3. Review roofing systems requirements (drawings, specifications, and other contract documents).
 4. Review required submittals, both completed and yet to be completed.
 5. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 6. Review required inspection, testing, certifying, and material usage accounting procedures.
 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
 8. Record (contractor) discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
 9. Review notification procedures for weather or non-working days.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle roofing sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused rolled goods on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.
- D. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

1.7 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the Roofing System Manufacturer will provide the following:

1. Keep the Architect informed as to the progress and quality the work as observed.
2. Provide job site inspections minimum three days per week by a full time employee of the manufacturer.
3. Report to the Architect in writing, any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
4. Confirm, after completion of the project and based on manufacturer's observations and tests, that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.8 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or when a 30% chance of precipitation is expected.
- B. Do not apply roofing insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- D. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

1.9 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet roofing with related units of work specified in other sections to ensure that roof assemblies, including roof accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted.

1.10 WARRANTY

- A. Membrane Manufacturer upon completion of installation, and acceptance by the Owner and Architect, the manufacturer will supply to the Owner the Thirty (30) Year "No Dollar Limit" watertight warranty.
 1. Warranty shall cover the calculated wind speed.
- B. Contractor will submit a minimum of a 5 year warranty to the membrane manufacturer with a copy directly to Owner.
- C. Underlayment manufacturer will provide an annual inspection at the annual request of the owner for the life of the warranty.

PART 2 - PRODUCTS

2.1 GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.

1. Design is based on Landmark Premium by Certainteed.
 2. Pre-approved equal as noted below.
- B. Provide products as specified. Prime bidding contractors proposing substitutes shall submit all required submittal information under 07 31 13, PART 1, 1.4 to The Owner's representative at least 10 days prior to bid due date. All substitutions have to be approved prior to bidding. No substitutions will be accepted after bidding or contract award. All bidders will have an opportunity to bid on any substitute system that is approved. Substitution requests will not be accepted from anyone other than prime bidding contractors who have attended the prebid walkthrough.
- C. Any item or materials submitted as an alternate to the manufacturer specified must comply in all respects as to the quality and performance, including job site investigation of the brand name specified. The Owner shall be the sole judge as to whether or not an item submitted as an equal is truly equal. Should the contractor choose to submit on the equal basis, he shall assume all risk involved, monetary or otherwise, should the Owner find it unacceptable. The Contractor is warned to obtain prior approval at least ten days prior to bid date of any material not specified. The following must be included for materials submitted for substitutions: (five copies)
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. For products:
 - a. Product identification, including manufacturer's literature and manufacturer's name and address.
 - b. Current certificate from an accredited testing laboratory comparing the physical and performance attributes of the proposed material with those of the specified. Test results must be dated, notarized, and on testing laboratory stationary.
 - c. A five gallon sample of any adhesive, coating, mastic or sealant and a 3' X 5', sample of any sheeting goods as may be specified. Manufacturer's labels must be on containers, smaller containers may be submitted if manufacturer's labels are attached.
 - d. Material Safety Data Sheets providing all pertinent data as to flammability, combustibility, toxicity, etc.
 - e. List of at least five (5) local jobs within 50 miles, where the proposed alternate material was used under similar conditions. These jobs must be available for inspection by the Owner. Names, phone numbers, and a copy of manufacturers warranty on each job are required for verification.
 - f. Notarized statement from the Roofing System Manufacturer, signed by a corporate officer of the Corporation with the Corporate Seal affixed thereto stating in writing that:
 - All Bidding Documents have been inspected.
 - The project site has been inspected.
 - The roofing system manufacturer will provide field inspections on a daily basis, on during, and until all construction work is completed and accepted by the Owner. Inspections shall be performed by a full time employee of the manufacturer. These inspections shall be provided to the Owner at no charge.
 - Furnish the 30 year NDL "No Dollar Limit" warranty as stipulated in the Contract Documents.
 3. For construction methods:
 - a. Detailed description of proposed method.

- b. Drawings illustrating methods.
 - 4. Itemized comparison of proposed substitution with product or method specified.
 - 5. Data related to changes in construction schedule.
 - 6. Relation to separate contracts.
- D. In making request for substitution, Bidder / Contractor represents:
- 1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
 - 2. He will provide the same guarantee for substitution as for product or method specified.
 - 3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 - 4. He waives all claims for additional cost related to substitution which consequently become apparent.
 - 5. Cost data is complete and includes all related cost under his contract or other contracts which may be affected by the substitution.
 - 6. He will reimburse the Owner for all redesign cost substitute may require.
- E. Substitutions will not be considered if:
- 1. Product or method to be considered does not have a minimum of ten (10) years of successful performance in roofing and reroofing applications in the United States.
 - 2. Any discrepancies in the test data, or if the tests or submittals are incomplete.
 - 3. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 2.01.
 - 4. Acceptance will require substantial revision of Contract Documents.

2.2 MATERIALS

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D 3462; Class A fire resistance.
- 1. Style: Premier.
 - 2. Color: from manufacturer's full color range.

2.3 SHEET MATERIALS

- A. Underlayments:
- 1. Product " R-mer Seal" by Garland or pre-approved
 - a. Peel and Stick Modified Bitumen Underlayment: Styrene-Butadiene-Styrene (SBS) modified fiberglass base sheet, 45 mil thickness, asphalt coated, Class A fire retardant, conforming to ASTM D-5147, breaking strength 35 lb. min. when tested according to ASTM D 5147.
 - b. White film surface.
 - c. Slip resistant.

2.4 ACCESSORIES

- A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch shank diameter, 7/16 inch head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch into roof sheathing or decking. Staples will be rejected.
- B. Plastic Cement: ASTM D 4586 Type I, fibrated asphalt roof cement. "Flashing

Bond" manufactured by Garland.

- C. Sealant: Tuff Stuff by The Garland Company.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate surfaces to receive modified bitumen sheet roofing system and associated work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing modified bitumen sheet system.
- B. Insurance / Code Compliance: Where required, install and test roofing system to comply with governing regulations and specified insurance requirements.
- C. Protect other work from spillage of roofing materials, and prevent liquid materials from entering or clogging drains and conductors. Replace or restore other work damaged by installations of roofing system work.
- D. Coordinate installing roofing system components so that insulation and roofing plies are not exposed to precipitation or left exposed overnight.
- E. Substrate Joint Penetrations: Prevent bitumen from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
- F. Apply roofing materials as specified herein unless recommended otherwise by manufacturer's instructions. Keep roofing materials dry before and during application. Do not permit phased construction. Complete application of roofing plies, modified sheet and flashing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.

3.3 INSTALLATION - UNDERLAYMENT

- A. Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 6 inches. Stagger end laps of each consecutive layer. Nail in place.
- B. Items projecting through or mounted on roof: Weather lap and seal watertight with plastic cement.

3.4 INSTALLATION - METAL FLASHING AND ACCESSORIES

- A. Install flashings in accordance with Section 07 62 00, and SMACNA Architectural Sheet Metal Manual requirements.
- B. Weather lap joints minimum 3 inches and seal weather tight with plastic cement.
- C. Secure in place with nails at 8 inches on center. Conceal fastenings.
- D. Items Projecting Through or Mounted on Roofing: Flash and seal weather tight with plastic cement.

3.5 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions.
 - 1. Fasten strip shingles using 6 nails per strip, or as required by code, whichever is closer.
 - 2. Fasten strip shingles with minimum 3 asphalt mastic seal tabs 1 inch diameter by 1/8 inch thick per shingle, and as recommended by manufacturer for high wind exposure installation.
- B. Place shingles in straight coursing pattern with 5 inch weather exposure to produce double thickness over full roof area. Provide double course of shingles at eaves.
- C. Project first course of shingles 3/4 inch beyond fascia boards.
- D. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
- E. Coordinate shingle installation with sheet metal valley flashings.
- F. Cap hips with individual shingles, maintaining 5 inch weather exposure. Place to avoid exposed nails.
- G. Coordinate installation of roof mounted components or work projecting through roof with weather tight placement of counterflashings.
- H. Complete installation to provide weather tight service.

3.6 FIELD QUALITY CONTROL

- A. Testing:
 - 1. Re-test until roof is shown to be watertight.
- B. Underlayment manufacturer Field Services: Provide three times weekly site inspection for a minimum of one (1) hour during active roofing operations by an experienced, full time employee of the roofing manufacturer. Submit written reports weekly.

3.7 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Touch up minor abrasions and exposed fasteners with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
 - 1. No exposed sealant or visible raw metal.
- C. Sweep and remove chips, shavings, and dust from roof on a daily basis during installation period. Leave installed work clean, free from grease, finger marks and stains.
- D. Upon completion of installation, remove scraps and debris from project site.

3.8 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

- B. Touch-up, repair, or replace damaged roof panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 41 12

METAL WALL PANELS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Provide all labor, equipment, and materials to install wall panel system of preformed steel panels.
- B. Fastening system.
- C. Factory finishing.
- D. Accessories and miscellaneous components: Flashings, fasteners, and accessories as required for weather tight wall installation.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.
- B. Coordinate with related work specified elsewhere:
 - 1. Division 6 Section "Rough Carpentry" for wood blocking and nails.
 - 2. Division 7 Section "Flashing and Sheet Metal."

1.3 REFERENCE

- A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Wall Underlayment for Ice Dam Protection.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
- D. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Wall Panel Systems by Uniform Static Air Pressure Difference.
- E. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Wall Panel Systems.
- F. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code
- G. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green".
- H. Sheet Metal and Air Conditioning Contractors National Association: "Architectural Sheet Metal Manual".
- I. ASTM E108 – Standard Test Methods Fire Tests of Wall Coverings.
- J. ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Wall and Siding Systems by Uniform Static Air Pressure Difference.
- K. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.

1.4 SUBMITTALS

- A. Provide the following to the Owner prior to award of wall work.
 - 1. Written certification from the wall system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified wall system.
 - 2. Descriptive product data including SDS sheets.
 - 3. Certification of Class A wall system.
 - 4. Sample copy of contractor's workmanship warranty.
 - 5. Sample copy of specified Manufacturer's warranty.
 - 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. **PRODUCT DATA:** Submit brochures containing material samples, SDS, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
 - 1. Within four (4) weeks of award of contract, submit:
 - a. Minimum of two (2) samples of each material and descriptive literature.
 - b. All other data and information to satisfy requirements of manufacturer on warranty needs.
 - c. A written statement from the wall materials manufacturer's corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
 - d. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
 - e. Certified copy of ISO 9001 compliance.
- C. **SHOP DRAWINGS:** Indicate size and materials. Show locations and installation procedures. Include details of joints, attachments, fastening patterns, and clearances. Submit 1 electronic original and retain approved copies at the Site.
- D. **MAINTENANCE PROCEDURES:** Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturer's printed instructions regarding care and maintenance of wall.
- E. **Wind uplift calculation:** wall system manufacturer's engineering department shall provide an ASCE 7-10 calculation per CBC, Chapter 15. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for panel attachment.
- F. **Litigation and settlements:** provide a notarized statement from a corporate officer stating wall system manufacturer has not settled litigation or paid fines to a public agency in excess of \$20 million dollars.

1.5 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Wall system manufacturer shall have a minimum of 10 years experience in manufacturing wall products in the United States and be ISO 9001 certified.
- B. **Installer Qualifications:** Installer (Wall) shall be specializing in wall application with minimum 5 years experience and who is certified by the wall system manufacturer as qualified to install manufacturer's wall materials.
 - 1. Installer shall be California C-39 licensed.
 - 2. Installer shall have an office within 100 miles of the District office in order to provide prompt leak response during contractor warranty period.

- C. Regulatory Requirements:
 - 1. Classification by Underwriters' Laboratories, Inc. as a Class A covering.
 - 2. Wall system shall be installed in accordance with ASCE-7 wind uplift requirements for geographical location and a 120 MPH 3-second gust wind speed zone with an importance factor of 1.15 based on IBC requirements. Wind-resistance loads listed below have a safety factor of 2.0 incorporated into the calculation.
 - 3. Follow local, state, and federal regulations of safety standards and codes. Refer to applicable building code or International Building Code for wall system installation requirements and limitations.
- D. Installer's Field Supervision: Require Installer to maintain a full-time Supervisor/Forman on job site during all phases of work and at any time work is in progress, proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen at all times.
- E. It shall be the Contractor's responsibility to respond immediately to correction of wall leakage during construction.
- F. Disqualification of Bidders: A bidder can be disqualified by the Architect or Owner for any of the following reasons, but not limited to:
 - 1. The failure to attend the Pre-Bid conference at the time and place so described under Bidding Dates.
 - 2. Incorrect use of the "Proposal" as provided by the Architect/Owner. Any changes in said format shall be accepted by the Architect/Owner only when requested and approved in writing prior to the bid opening. Changes in the Proposal after the opening of the bids will not be accepted.
 - 3. Lack of proficiency as shown by past work or incomplete work under other contracts which, in the judgement of the Architect/Owner might hinder or prevent the prompt completion of additional work if so awarded or any involvement in any legal actions which relate to past or present performance. This includes, but is not limited to lawsuits, court appointed actions, and/or ongoing litigation.
- G. Pre-installation Conference: Approximately 2 weeks before scheduled of commencement of wall system and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive wall work, installers of walltop units and other work in the around wall that must precede or follow wall work (including mechanical work if any), Architect/Owner, wall system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:
 - 1. Review foreseeable methods and procedures related to wall work.
Tour representative areas of wall substrates (decks), inspect and discuss condition of substrate, penetrations, and other preparatory work performed by other trades.
 - 2. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 3. Review wall systems requirements (drawings, specifications, and other contract documents).
 - 4. Review required submittals, both completed and yet to be completed.

5. Review and finalize construction schedule related to wall work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying, and material usage accounting procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary wall (if not a mandatory requirement).
8. Record (contractor) discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
9. Review notification procedures for weather or non-working days.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle wall sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused rolled goods on the wall overnight or when wall work is not in progress unless protected from weather and other moisture sources.
- D. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

1.7 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the Wall System Manufacturer will provide the following:
 1. Keep the Architect informed as to the progress and quality the work as observed.
 2. Provide job site inspections minimum three days per week by a full time employee of the manufacturer.
 3. Report to the Architect in writing, any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
 4. Confirm, after completion of the project and based on manufacturer's observations and tests, that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.8 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply wall membrane during inclement weather or when a 30% chance of precipitation is expected.
- B. Do not apply wall insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherpalled during same day.
- D. Proceed with wall work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

1.9 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet wall with related units of work specified in other sections to ensure that wall assemblies, including wall accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted.

1.10 WARRANTY

- A. Membrane Manufacturer upon completion of installation, and acceptance by the Owner and Architect, the manufacturer will supply to the Owner the Thirty (30) Year "No Dollar Limit" weathertight warranty.
 - 1. Warranty shall cover the calculated wind speed.
 - 2. Sole source warranty for modified bitumen, metal wall, metal wall panels, single ply membrane and penetration flashing material.
- B. Contractor will submit a minimum of a 5 year warranty to the membrane manufacturer with a copy directly to Owner.
- C. Membrane manufacturer will provide an annual inspection at the annual request of the owner for the life of the warranty.

PART 2 PRODUCTS

2.1 GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.
 - 1. Design is based on R-mer Wall Pan, manufactured by Garland Co.
 - 2. Pre-approved equal as noted below.
- B. Provide products as specified. Prime bidding contractors proposing substitutes shall submit all required submittal information under 07 41 12, PART 1, 1.4 to The Owner's representative at least 10 days prior to bid due date. All substitutions have to be approved prior to bidding. No substitutions will be accepted after bidding or contract award. All bidders will have an opportunity to bid on any substitute system that is approved. Substitution requests will not be accepted from anyone other than prime bidding contractors who have attended the prebid walkthrough.
- C. Any item or materials submitted as an alternate to the manufacturer specified must comply in all respects as to the quality and performance, including job site investigation of the brand name specified. The Owner shall be the sole judge as to whether or not an item submitted as an equal is truly equal. Should the contractor choose to submit on the equal basis, he shall assume all risk involved, monetary or otherwise, should the Owner find it unacceptable. The Contractor is warned to obtained prior approval at least ten days prior to bid date of any material not specified. The following must be included for materials submitted for substitutions: (five copies)
 - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - 2. For products:
 - a. Product identification, including manufacturer's literature and manufacturer's name and address.
 - b. Material Safety Data Sheets providing all pertinent data as to flammability, combustibility, toxicity, etc.
 - c. List of at least five (5) local jobs within 50 miles, where the proposed alternate material was used under similar conditions. These jobs must be available for inspection by the Owner.

Names, phone numbers, and a copy of manufacturer's warranty on each job are required for verification.

- d. Notarized statement from the Wall System Manufacturer, signed by a corporate officer of the Corporation with the Corporate Seal affixed thereto stating in writing that:

- All Bidding Documents have been inspected.
- The project site has been inspected.
- The wall system manufacturer will provide field inspections on a daily basis, on during, and until all construction work is completed and accepted by the Owner. Inspections shall be performed by a full time employee of the manufacturer. These inspections shall be provided to the Owner at no charge.
- Furnish the 30 year warranty as stipulated in the Contract Documents.

3. For construction methods:
- a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Data related to changes in construction schedule.
6. Relation to separate contracts.

- D. In making request for substitution, Bidder / Contractor represents:

- 1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
- 2. He will provide the same guarantee for substitution as for product or method specified.
- 3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
- 4. He waives all claims for additional cost related to substitution which consequently become apparent.
- 5. Cost data is complete and includes all related cost under his contract or other contracts which may be affected by the substitution.
- 6. He will reimburse the Owner for all redesign cost substitute may require.

- E. Substitutions will not be considered if:

- 1. Product or method to be considered does not have a minimum of ten (10) years of successful performance of wall applications in the United States.
- 2. Any discrepancies in the test data, or if the tests or submittals are incomplete.
- 3. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 2.01.
- 4. Acceptance will require substantial revision of Contract Documents.

2.2 METAL WALL PANELS

- A. Architectural Metal Wall Panel: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of wall system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
- 1. Steel Panels:
 - a. Aluminum-zinc alloy-coated steel conforming to ASTM A792/A792M; minimum AZ50 coating.
 - b. Steel Thickness: Minimum 24 gauge.
 - 2. Profile: with minimum 7/8 inch minimum seam height; concealed fastener system for field seaming with special tool.
 - a. Symmetrical profile permitting removal of individual panels without removing adjacent panels.

3. Texture: Smooth, with intermediate V-grooves for added stiffness.
4. Length: Full length, without lapped horizontal joints.
5. Width: Maximum panel coverage of 12 3/4 inches.

2.3 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard extruded aluminum concealed anchor clips designed for specific wall system and engineered to meet performance requirements, including anticipated thermal movement.
 1. Concealed Anchor Clips: 24 ga G-90 galv., ONE (1) piece clip with projecting legs.
 - a. Clip design: Isolate sealant in panel cap from contact with clip to limit sealant damage during expansion and contraction.
 - b. Configured to maintain minimum clearance of 7/8 inch between panel and substrate for ventilation to reduce condensation and reduce contact of panel fastener head to panel.
- B. Fasteners: As recommended by manufacturer for project conditions and panel type, concealed wherever possible.
 1. Concealed fasteners: Corrosion resistant steel screws designed to meet structural loading requirements. The normal minimum screw size shall be Rawl #14.
 2. Exposed fasteners: Corrosion resistant steel screws (cadmium or zinc coatings are not acceptable), stainless steel with neoprene sealing washer, or 3/16 inch diameter waterwall rivets with color matched finish.

2.4 PANEL FINISH

- A. Fluoropolymer Coating System: Manufacturer's standard multi-coat thermocured coating system, including minimum 70 percent fluoropolymer color topcoat with minimum total dry film thickness of 0.9 mil; color and gloss to match sample.
- B. Concealed Surface Finish: Baked-on polyester coating with 0.20-0.30 mil DFT.
- C. Color: Garland standard color.

2.5 ACCESSORIES AND MISCELLANEOUS ITEMS

- A. Miscellaneous Sheet Metal Items: Provide flashings of the same material, thickness, and finish as used for the wall panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish, closed-cell synthetic rubber, neoprene, or PVC, or combination steel and closed-cell foam.
- C. Sealants.
 1. Concealed sealant must be non-hardening, butyl type.
 2. Exposed sealant colors as selected by Architect, compatible with wall finish color.
- D. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 50 mil total thickness; with strippable release film and woven polypropylene sheet top surface.
 1. Sheet Thickness: 50 mil minimum total thickness.
 2. Self Sealing: Passing nail sealability test specified in ASTM D1970/D1970M.
 3. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
 4. High Temperature Resistance formulation.
 5. Water Vapor Permeance: 0.05 perm, maximum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 6. Products:
 - a. R-mer Seal by Garland or pre-approved equal.
 - b. White with a nonslip surface.

- E. Provide all miscellaneous accessories for complete installation.

2.6 FABRICATION

- A. Form metal work true to required shape, accurate in size, square and free from distortion or defects, with clear, sharp, straight, and uniform bends and rises. Hem exposed edges of flashings. Fabricate to predetermined exact lengths wherever possible. Cut panels to precise lengths indicated from field measurements.
- B. Panels: Fabricate panels and accessory items at factory to the greatest extent possible, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- C. Accessories: Factory-fabricate trim and flashing components in longest practical lengths.
 - 1. Provide mitered corners, joined using closed end pop rivets and joint sealant.
- D. Flashings: Provide as specified in related sections, as required by wall material manufacturers and referenced standards. Coordinate work of this section with related sections. Provide complete systems without conflict or omission.
 - 1. Fabricate wall and related sheet metal work in accord with approved shop drawings and applicable standards.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation of preformed metal wall panels until substrates have been properly prepared.
 - 1. Determine if work of other trades which penetrates the wall or is to be made watertight by the wall is in place and approved prior to installation of wall.
 - 2. Verify pipes, sleeves, or vents through wall are solidly set, reglets are in place, and nailing strips located.
 - a. Locate penetrations in the center of wall panel.
 - 3. Verify wall termination, base flashings and gutter flanges are in place, sealed, and secure.
 - 4. Notify Architect in writing if substrates are not suitable for application of panel system.
 - 5. Do not proceed with installation until substrates are acceptable.
- B. Structural surfaces: Smooth, even, sound, surface dry 19 percent maximum, clean and free of depressions, waves, or projections before material is applied.
 - 1. Examine the alignment and placement of the building structure and substrate. Correct any objectionable warp, waves or buckles in the substrate before proceeding with installation of the preformed metal wall. The installed wall panels will follow the contour of the structure and may appear irregular if not corrected.
 - b. Apply no materials during wet weather or on wet surface.

3.2 INTERFACE WITH OTHER WORK

- A. Coordinate with wall accessories, miscellaneous sheet metal accessories, piping vents and other items specified in related sections penetrating metal wall work. Avoid conflict or omission in waterproofing systems and provide watertight installation.

3.3 PREPARATION

- A. Verify field dimensions prior to ordering materials.
 - 1. Establish straight side and crosswise benchmarks.
 - 2. Check rectangular walls for squareness and straightness. Gable ends may not be straight; set a true line for the gable clips and flashing with stringline.

3. Measure the wall lengthwise to confirm panel lengths, overhangs, coverage of flashings at eaves and ridges and verify clearances for thermal movement.
- B. Broom clean wood sheathing prior to installation of wall system.
- C. Coordinate wall work with provisions for wall drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed wall will be free of leaks.
- D. Remove protective film from surface of wall panels immediately prior to installation. Strip film carefully, to avoid damage to prefinished surfaces.
- E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by wall panel manufacturer.
- F. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.4 INSTALLATION

- A. Overall: Install system in accordance with approved manufacturer's shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of wall system securely in place while allowing for thermal and structural movement.
 1. Install peel and stick membrane over entire wall surface.
 2. Install wall system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances. Where exposed fasteners are unavoidable, use fasteners prefinished to match panels.
 3. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete wall assembly, including flashings, closure strips, and similar accessory items.
 1. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
- C. Flashings: Coordinate to provide weathertight conditions at wall terminations. Fabricate and install in accordance with standards of SMACNA Manual.
 1. Install flashings as shown on Drawings and approved shop drawings.
 2. Secure flashings in place using concealed fasteners.
 3. Cleat and seam all joints.
 4. Apply plastic cement compound between metal flashings and felt flashings.
 5. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles and radius indicated or required.
 6. Seal metal joints watertight with two parallel beads of sealant, do not permit sealant to migrate to exposed surfaces.
 7. Install flashings to allow thermal movement.
- D. Install self-adhering underlayment on wall before installing preformed metal wall panels. Secure by methods acceptable to wall panel manufacturer, minimizing use of metal fasteners. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 4 inches and side and end laps a minimum of 6 inches. Offset seams in successive layers of underlayment..
 1. Cover entire surface under panels; holes or tears not permitted.
 2. Install underlayment(s) in order to achieve a Class A Fire Rated Assembly per CBC.
 3. Lap sheet metal flashings. All laps shall weather to exterior.
 4. Double layer at changes in plane by extending 6 inches around corner from each side.
 5. Install a 3'-0" wide additional layer of self-adhering underlayment at flashing and panel terminations (ridges, eaves, rakes, and wall penetrations).
- E. Wall Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations. Install panels plumb, level, and true to line.
 1. Form weathertight system incorporating concealed clips.

2. Fully interlock panels with adjacent panels; apply sealants as recommended by panel manufacturer to achieve watertight installation.
 3. Provide sealant tape or other approved continuous joint sealer at lapped panel joints.
 4. Install sealant or sealant tape, as recommended by panel manufacturer, at end laps and side joints.
 5. Cut panels only at approved locations, and only where necessary to make openings for penetrations and field adjustments. Cut using a power saw with metal cutting blade.
 - a. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 0.45 mil.
 6. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Provide gasketed stainless steel fasteners between dissimilar metals.
 7. Provide for temperature expansion/contraction movement of panels at wall penetrations and wall mounted equipment in accordance with panel manufacturer's product data and design calculations.
- F. Anchorage shall allow for temperature expansion/contraction movement without stress or elongation of panels, clips, or anchors. Attach clips to structural substrate using fasteners of size, length and spacing as determined by manufacturer's design analysis to resist imposed loads.
1. Provide fastener head size beneath wall panel as recommended by panel manufacturer.
 2. Limit exposed fasteners to extent indicated on shop drawings.
- G. Do not allow shavings, metal dust, or chips to fall on panels.
1. Capture all drilling debris with a rag or cloth placed on the panels at the drilling operation.
- H. Provide installed wall that is true to line and plane, free of dents, and physical defects with a minimum of oil canning.

3.5 CONSTRUCTION TOLERANCES

- A. Maximum Alignment Variation: 1/4 inch in 20 feet, 3/8" in 40'-0" or more.

3.6 FIELD QUALITY CONTROL

- A. Testing:
1. Re-test until wall is shown to be weathertight.
- B. Manufacturer Field Services: Provide daily site inspection for a minimum of one (1) hour during active wall operations by an experienced, full time employee of the wall manufacturer. Submit written reports weekly.

3.7 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Touch up minor abrasions and exposed fasteners with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
1. No exposed sealant or visible raw metal.
- C. Sweep and remove chips, shavings, and dust from wall on a daily basis during installation period. Leave installed work clean, free from grease, finger marks and stains.
- D. Upon completion of installation, remove scraps and debris from project site.

3.8 PROTECTION

- A. Do not permit storage of materials or wall traffic on installed wall panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect wall until completion of project.

- B. Touch-up, repair, or replace damaged wall panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 41 13

METAL ROOF PANELS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Remove all existing roofing to the structural deck.
- B. Provide all labor, equipment, and materials to install architectural roofing system of preformed steel panels.
- C. Fastening system.
- D. Factory finishing.
- E. Accessories and miscellaneous components: Flashings, fasteners, and accessories as required for weatherproof installation.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.
- B. Coordinate with related work specified elsewhere:
 - 1. Division 6 Section "Rough Carpentry" for wood blocking and nails.
 - 2. Division 7 Section "Flashing and Sheet Metal."

1.3 REFERENCE

- A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
- D. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
- E. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.
- F. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code
- G. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green".
- H. Sheet Metal and Air Conditioning Contractors National Association: "Architectural Sheet Metal Manual".
- I. ASTM E108 – Standard Test Methods Fire Tests of Roof Coverings.
- J. ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
- K. American Society of Civil Engineers (ASCE):

1. ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.

1.4 SUBMITTALS

- A. Provide the following to the Owner prior to award of roofing work.
 1. Written certification from the roofing system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified roofing system.
 2. Descriptive product data including MSD sheets.
 3. Certification of Class A roof system.
 4. Sample copy of contractor's workmanship warranty.
 5. Sample copy of specified Manufacturer's warranty.
 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. **PRODUCT DATA:** Submit brochures containing material samples, SDS, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
 1. Within four (4) weeks of award of contract, submit:
 - a. Minimum of two (2) samples of each material and descriptive literature.
 - b. All other data and information to satisfy requirements of manufacturer on warranty needs.
 - c. A written statement from the roofing materials manufacturer's corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
 - d. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
 - e. Certified copy of ISO 9001 compliance.
- C. **SHOP DRAWINGS:** Indicate size and materials. Show locations and installation procedures. Include details of joints, attachments, fastening patterns, and clearances. Submit 1 electronic original and retain approved copies at the Site.
- D. **MAINTENANCE PROCEDURES:** Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturer's printed instructions regarding care and maintenance of roof.
- E. **Wind uplift calculation:** roofing system manufacturer's engineering department shall provide a ASCE 7-10 calculation per CBC, Chapter 15. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for panel attachment.
- F. **Plumbing calculation:** roofing system manufacturer's engineering department shall provide a primary drain and overflow drain or overflow scupper calculation per CBC, Chapter 11. Calculations shall be stamped by a CA licensed mechanical engineer.
- G. **Structural wind load calculation:** manufacturer's engineering department shall provide an ASCE 7-10 calculation per CBC, Chapter 16. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for structural deck attachment.
 1. Manufacturer shall provide on site verification structural deck meets loading requirements after roof have been removed.
- H. **Litigation and settlements:** provide a notarized statement from a corporate officer stating roofing system manufacturer has not settled litigation or paid fines to a public agency in excess of \$20 million dollars.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Roofing system manufacturer shall have a minimum of 10 years experience in manufacturing metal roofing products in the United States and be ISO 9001 certified.
- B. Installer Qualifications: Installer (Roofing) shall be specializing in roof application with minimum 5 years experience and who is certified by the roofing system manufacturer as qualified to install manufacturer's roofing materials.
 - 1. Installer shall be California C-39 licensed.
 - 2. Install shall have an office within 100 miles of the District office in order to provide prompt leak response during contractor warranty period.
- C. Regulatory Requirements:
 - 1. Classification by Underwriters' Laboratories, Inc. as a Class A roof covering.
 - 2. Roofing system shall be installed in accordance with ASCE-7 wind uplift requirements for geographical location and a 120 MPH 3-second gust wind speed zone with an importance factor of 1.15 based on IBC requirements. Wind-resistance loads listed below have a safety factor of 2.0 incorporated into the calculation.
 - 3. Follow local, state, and federal regulations of safety standards and codes. Refer to applicable building code or International Building Code for roofing system installation requirements and limitations.
- D. Installer's Field Supervision: Require Installer to maintain a full-time Supervisor/Forman on job site during all phases of modified bituminous sheet roofing work and at any time roofing work is in progress, proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen and on the roof at all times.
- E. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction.
- F. Disqualification of Bidders: A bidder can be disqualified by the Architect or Owner for any of the following reasons, but not limited to:
 - 1. The failure to attend the Pre-Bid conference at the time and place so described under Bidding Dates.
 - 2. Incorrect use of the "Proposal" as provided by the Architect/Owner. Any changes in said format shall be accepted by the Architect/Owner only when requested and approved in writing prior to the bid opening. Changes in the Proposal after the opening of the bids will not be accepted.
 - 3. Lack of proficiency as shown by past work or incomplete work under other contracts which, in the judgement of the Architect/Owner might hinder or prevent the prompt completion of additional work if so awarded or any involvement in any legal actions which relate to past or present performance. This includes, but is not limited to lawsuits, court appointed actions, and/or ongoing litigation.
- G. Pre-installation Roofing Conference: Approximately 2 weeks before scheduled of commencement of roof system and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing that must precede or follow

roofing work (including mechanical work if any), Architect/Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:

1. Review foreseeable methods and procedures related to roofing work.
Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
2. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
3. Review roofing systems requirements (drawings, specifications, and other contract documents).
4. Review required submittals, both completed and yet to be completed.
5. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
6. Review required inspection, testing, certifying, and material usage accounting procedures.
7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
8. Record (contractor) discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
9. Review notification procedures for weather or non-working days.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle roofing sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused rolled goods on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.
- D. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

1.7 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the Roofing System Manufacturer will provide the following:
 1. Keep the Architect informed as to the progress and quality the work as observed.
 2. Provide job site inspections minimum three days per week by a full time employee of the manufacturer.
 3. Report to the Architect in writing, any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
 4. Confirm, after completion of the project and based on manufacturer's observations and tests, that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.8 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or when a 30% chance of precipitation is expected.
- B. Do not apply roofing insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- D. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

1.9 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet roofing with related units of work specified in other sections to ensure that roof assemblies, including roof accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted.

1.10 WARRANTY

- A. Membrane Manufacturer upon completion of installation, and acceptance by the Owner and Architect, the manufacturer will supply to the Owner the Thirty (30) Year "No Dollar Limit" watertight warranty.
 - 1. Warranty shall cover the calculated wind speed.
 - 2. Sole source warranty for modified bitumen, metal roofing, metal wall panels, single ply membrane and penetration flashing material.
- B. Contractor will submit a minimum of a 5 year warranty to the membrane manufacturer with a copy directly to Owner.
- C. Membrane manufacturer will provide an annual inspection at the annual request of the owner for the life of the warranty.

PART 2 PRODUCTS

2.1 GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.
 - 1. Design is based on R-mer Shield, manufactured by Garland Co.
 - 2. Pre-approved equal as noted below.
- B. Provide products as specified. Prime bidding contractors proposing substitutes shall submit all required submittal information under 07 41 13, PART 1, 1.4 to The Owner's representative at least 10 days prior to bid due date. All substitutions have to be approved prior to bidding. No substitutions will be accepted after bidding or contract award. All bidders will have an opportunity to bid on any substitute system that is approved. Substitution requests will not be accepted from anyone other than prime bidding contractors who have attended the prebid walkthrough.
- C. Any item or materials submitted as an alternate to the manufacturer specified must comply in all respects as to the quality and performance, including job site investigation of the brand name

specified. The Owner shall be the sole judge as to whether or not an item submitted as an equal is truly equal. Should the contractor choose to submit on the equal basis, he shall assume all risk involved, monetary or otherwise, should the Owner find it unacceptable. The Contractor is warned to obtain prior approval at least ten days prior to bid date of any material not specified. The following must be included for materials submitted for substitutions: (five copies)

1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. For products:
 - a. Product identification, including manufacturer's literature and manufacturer's name and address.
 - b. Material Safety Data Sheets providing all pertinent data as to flammability, combustibility, toxicity, etc.
 - c. List of at least five (5) local jobs within 50 miles, where the proposed alternate material was used under similar conditions. These jobs must be available for inspection by the Owner. Names, phone numbers, and a copy of manufacturer's warranty on each job are required for verification.
 - d. Notarized statement from the Roofing System Manufacturer, signed by a corporate officer of the Corporation with the Corporate Seal affixed thereto stating in writing that:
 - All Bidding Documents have been inspected.
 - The project site has been inspected.
 - The roofing system manufacturer will provide field inspections on a daily basis, on during, and until all construction work is completed and accepted by the Owner. Inspections shall be performed by a full time employee of the manufacturer. These inspections shall be provided to the Owner at no charge.
 - Furnish the 30 year NDL "No Dollar Limit" warranty as stipulated in the Contract Documents.
 3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 4. Itemized comparison of proposed substitution with product or method specified.
 5. Data related to changes in construction schedule.
 6. Relation to separate contracts.
- D. In making request for substitution, Bidder / Contractor represents:
1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
 2. He will provide the same guarantee for substitution as for product or method specified.
 3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 4. He waives all claims for additional cost related to substitution which consequently become apparent.
 5. Cost data is complete and includes all related cost under his contract or other contracts which may be affected by the substitution.
 6. He will reimburse the Owner for all redesign cost substitute may require.
- E. Substitutions will not be considered if:
1. Product or method to be considered does not have a minimum of ten (10) years of successful performance in roofing and reroofing applications in the United States.
 2. Any discrepancies in the test data, or if the tests or submittals are incomplete.
 3. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 2.01.

4. Acceptance will require substantial revision of Contract Documents.

2.2 METAL ROOF PANELS

- A. Architectural Metal Roofing: Provide complete engineered system complying with specified requirements and capable of remaining watertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
 1. Steel Panels:
 - a. Aluminum-zinc alloy-coated steel conforming to ASTM A792/A792M; minimum AZ50 coating.
 - b. Steel Thickness: Minimum 24 gauge.
 2. Profile: Standing seam, with minimum 2-1/8 inch minimum seam height; concealed fastener system for field seaming with special tool.
 - a. Symmetrical profile permitting removal of individual panels without removing adjacent panels.
 3. Texture: Smooth, with intermediate ribs for added stiffness.
 4. Length: Full length of roof slope, without lapped horizontal joints.
 5. Width: Maximum panel coverage of 24 inches.

2.3 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard extruded aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.
 1. Concealed Anchor Clips: 0.90" extruded aluminum, ONE (1) piece clip with projecting legs.
 - a. Clip design: Isolate sealant in panel cap from contact with clip to limit sealant damage during expansion and contraction.
 - b. Configured to maintain minimum clearance of 3/8 inch between panel and substrate for ventilation to reduce condensation and reduce contact of panel fastener head to panel.
 2. Snap-on Seam cap: Minimum 1.25 inch wide cap of continuous length matching roof panel, field seamed by manufacturer's seaming machine.
 - a. Cap designed to receive continuous double bead of sealant and avoid contact with anchor clip, allowing unlimited thermal movement of panel without damage to cap sealant.
- B. Fasteners: As recommended by manufacturer for project conditions and panel type, concealed wherever possible.
 1. Concealed fasteners: Corrosion resistant steel screws designed to meet structural loading requirements. The normal minimum screw size shall be Rawl #14.
 2. Exposed fasteners: Corrosion resistant steel screws (cadmium or zinc coatings are not acceptable), stainless steel with neoprene sealing washer, or 3/16 inch diameter waterproof rivets with color matched finish.

2.4 PANEL FINISH

- A. Fluoropolymer Coating System: Manufacturer's standard multi-coat thermocured coating system, including minimum 70 percent fluoropolymer color topcoat with minimum total dry film thickness of 0.9 mil; color and gloss to match sample.
- B. Concealed Surface Finish: Baked-on polyester coating with 0.20-0.30 mil DFT.
- C. Color: Garland standard color.

2.5 ACCESSORIES AND MISCELLANEOUS ITEMS

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters (0.050" aluminum), downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish, closed-cell synthetic rubber, neoprene, or PVC, or combination steel and closed-cell foam.
- C. Sealants.
 - 1. Concealed sealant must be non-hardening, butyl type.
 - 2. Exposed sealant colors as selected by Architect, compatible with roof finish color.
- D. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 50 mil total thickness; with strippable release film and woven polypropylene sheet top surface.
 - 1. Sheet Thickness: 50 mil minimum total thickness.
 - 2. Self Sealing: Passing nail sealability test specified in ASTM D1970/D1970M.
 - 3. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
 - 4. High Temperature Resistance formulation.
 - 5. Water Vapor Permeance: 0.05 perm, maximum, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
 - 6. Products:
 - a. R-mer Seal by Garland or pre-approved equal.
 - b. White with a nonslip surface.
- E. Bearing Plates:
 - 1. Install bearing plates directly over rigid board insulation/underlayment at each anchor clip location.
 - 2. Bearing plates shall be three by five (3 x 5) inch by sixteen (16) gauge minimum, galvanized steel.
 - 3. Bearing plates shall be pre-punched with a hole pattern matching that of the panel anchor clips. Slotted holes are acceptable.
- F. Perforated stainless steel vent: Garland PerformaVent or approved equal.
 - 1. 22 ga, 316 stainless steel.
- G. Protection Board: Preprimed gypsum 1/4 inch thickness.
 - 1. 1/4" Densdeck Prime by Georgia Pacific or approved equal.
- H. Provide all miscellaneous accessories for complete installation.
- I. Z-furring: 16 ga galv. Supplied and engineered by roofing system manufacturer.

2.6 INSULATION

- A. Polyisocyanurate Roof Insulation for low slope asphalt roofing system:
Provide thicknesses of insulation as indicated, and tapered insulation where indicated on plans. Provide combination of types and thicknesses to provide a complete system.
 - 1. Surface Burning Characteristics: Provide assembly with composite flame spread rating of 25 or less and smoke developed of 50 or less, as determined in accordance with ASTM E 84.

2. Closed cell polyisocyanurate foam.
 - a. R-Value: 11 min.
3. Insulation board shall meet the following requirements:
 - a. UL, WH or FM listed under Roofing Systems
 - b. Federal Specification HH-I-1972, Class 1
 - c. Dimensional Stability ASTM D2126 2% max.
 - d. Compressive Strength ASTM D1621 25 psi min.
 - e. Vapor Permeability ASTM E-96 1 perm max.
 - f. Foam Core Density ASTM D1622.
 - g. Water Absorption ASTM C209 <1 %
 - h. Flame Spread ASTM E 84, 25 max.
 - i. R-Factor: 5.6 per inch thickness ASTM C 518 (Design Value).
 - j. Tapered insulation slope: ¼" per 12".

2.7 FABRICATION

- A. Form metal work true to required shape, accurate in size and radius, square and free from distortion or defects, with clear, sharp, straight, and uniform bends and rises. Hem exposed edges of flashings. Fabricate to predetermined exact lengths wherever possible. Cut panels to precise lengths indicated from field measurements.
- B. Machine roll roof and flashing elements required to be curved or radiused. Do not field bend or "walk-down". Provide true curves, segmented fabrication not allowed.
- C. Panels: Fabricate panels and accessory items at factory to the greatest extent possible, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- D. Joints: Factory-install captive gaskets, sealants, or separator strips at panel joints to provide watertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.
- E. Accessories: Factory-fabricate trim and flashing components in longest practical lengths.
 1. Provide mitered corners, joined using closed end pop rivets and joint sealant.
- F. Roof-related Flashings: Provide as specified in related sections, as required by roofing material manufacturers and referenced standards. Coordinate work of this section with related sections. Provide complete systems without conflict or omission.
 1. Fabricate roofing and related sheet metal work in accord with approved shop drawings and applicable standards.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
 1. Determine if work of other trades which penetrates the roof or is to be made watertight by the roof is in place and approved prior to installation of roofing.
 2. Verify pipes, sleeves, or vents through roof are solidly set, reglets are in place, and nailing strips located.
 - a. Locate penetrations in the center of roofing panel.
 3. Verify roofing termination, base flashings and gutter flanges are in place, sealed, and secure.
 4. Notify Architect in writing if substrates are not suitable for application of panel system.
 5. Do not proceed with installation until substrates are acceptable.

- B. Structural surfaces: Smooth, even, sound, surface dry 19 percent maximum, clean and free of depressions, waves, or projections before material is applied.
 - 1. Examine the alignment and placement of the building structure and substrate. Correct any objectionable warp, waves or buckles in the substrate before proceeding with installation of the preformed metal roofing. The installed roof panels will follow the contour of the structure and may appear irregular if not corrected.
 - b. Apply no materials during wet weather or on wet surface.

3.2 INTERFACE WITH OTHER WORK

- A. Coordinate with roof accessories, miscellaneous sheet metal accessories, piping vents and other items specified in related sections penetrating metal roofing work. Avoid conflict or omission in waterproofing systems and provide watertight installation.

3.3 PREPARATION

- A. Verify field dimensions prior to ordering materials.
 - 1. Establish straight side and crosswise benchmarks.
 - 2. Check rectangular roofs for squareness and straightness. Gable ends may not be straight; set a true line for the gable clips and flashing with stringline.
 - 3. Measure the roof lengthwise to confirm panel lengths, overhangs, coverage of flashings at eaves and ridges and verify clearances for thermal movement.
- B. Broom clean wood sheathing prior to installation of roofing system.
- C. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- D. Remove protective film from surface of roof panels immediately prior to installation. Strip film carefully, to avoid damage to prefinished surfaces.
- E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.
- F. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.4 INSTALLATION

- A. Overall: Install roofing system in accordance with approved manufacturer's shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
 - 1. Install insulation over the entire deck.
 - 2. Install peel and stick membrane over entire roof surface.
 - 3. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances. Where exposed fasteners are unavoidable, use fasteners prefinished to match panels.
 - 4. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
 - 1. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.
- C. Flashings: Coordinate to provide weathertight conditions at roof terminations. Fabricate and install in accordance with standards of SMACNA Manual.
 - 1. Install flashings as shown on Drawings and approved shop drawings.
 - 2. Secure flashings in place using concealed fasteners.

3. Cleat and seam all joints.
 4. Apply plastic cement compound between metal flashings and felt flashings.
 5. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles and radius indicated or required.
 6. Seal metal joints watertight with two parallel beads of sealant, do not permit sealant to migrate to exposed surfaces.
 7. Install flashings to allow thermal movement.
- D. Install self-adhering underlayment on roof deck before installing preformed metal roof panels. Secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 4 inches and side and end laps a minimum of 6 inches. Offset seams in successive layers of underlayment..
1. Cover entire surface under panels; holes or tears not permitted.
 2. Install underlayment(s) in order to achieve a Class A Fire Rated Assembly per CBC..
 3. Lap sheet metal flashings. All laps shall weather to exterior.
 4. Double layer at changes in plane by extending 6 inches around corner from each side.
 5. Install a 3'-0" wide additional layer of self-adhering underlayment at flashing and panel terminations (ridges, eaves, rakes, and roof penetrations).
- E. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations. Install panels plumb, level, and true to line.
1. Form watertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by the panel manufacturer.
 2. Fully interlock panels with adjacent panels; apply sealants as recommended by panel manufacturer to achieve watertight installation.
 3. Provide sealant tape or other approved continuous joint sealer at lapped panel joints.
 4. Install sealant or sealant tape, as recommended by panel manufacturer, at end laps and side joints.
 5. Cut panels only at approved locations, and only where necessary to make openings for penetrations and field adjustments. Cut using a power saw with metal cutting blade.
 - a. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 0.45 mil.
 6. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Provide gasketed stainless steel fasteners between dissimilar metals.
 7. Provide for temperature expansion/contraction movement of panels at roof penetrations and roof mounted equipment in accordance with panel manufacturer's product data and design calculations.
- F. Anchorage shall allow for temperature expansion/contraction movement without stress or elongation of panels, clips, or anchors. Attach clips to structural substrate using fasteners of size, length and spacing as determined by manufacturer's design analysis to resist imposed loads.
1. Provide fastener head size beneath roof panel as recommended by panel manufacturer.
 2. Limit exposed fasteners to extent indicated on shop drawings.
- G. Do not allow shavings, metal dust, or chips to fall on panels.
1. Capture all drilling debris with a rag or cloth placed on the panels at the drilling operation.
- H. Provide installed roof that is true to line and plane, free of dents, and physical defects with a minimum of oil canning.

3.5 CONSTRUCTION TOLERANCES

- A. Maximum Alignment Variation: 1/4 inch in 20 feet, 3/8" in 40'-0" or more.

3.6 FIELD QUALITY CONTROL

- A. Testing:
1. Re-test until roof is shown to be watertight.

- B. Manufacturer Field Services: Provide daily site inspection for a minimum of one (1) hour during active roofing operations by an experienced, full time employee of the roofing manufacturer. Submit written reports weekly.

3.7 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Touch up minor abrasions and exposed fasteners with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
 - 1. No exposed sealant or visible raw metal.
- C. Sweep and remove chips, shavings, and dust from roof on a daily basis during installation period. Leave installed work clean, free from grease, finger marks and stains.
- D. Upon completion of installation, remove scraps and debris from project site.

3.8 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 53 60

MODIFIED BITUMEN ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Remove all roofing to the structural deck.
- B. Provide all labor, equipment, and materials to install modified bitumen roof system over the properly prepared substrate.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.
- B. Coordinate with related work specified elsewhere:
 - 1. Division 6 Section "Rough Carpentry" for wood blocking and nails.
 - 2. Division 7 Section "Flashing and Sheet Metal."

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. D41, Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing
 - 2. D312, Specification for Asphalt Used in Roofing
 - 3. D451, Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products
 - 4. D1079, Terminology Relating to Roofing, Waterproofing, and Bituminous Materials
 - 5. D1227, Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
 - 6. D1863, Specification for Mineral Aggregate Used on Built-Up Roofs
 - 7. D2178, Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
 - 8. D2822, Specification for Asphalt Roof Cement
 - 9. D2824, Specification for Aluminum-Pigmented Asphalt Roof Coating
 - 10. D3019, Specification for Lap Cement Used with Asphalt Roll Roofing
 - 11. D4601, Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
 - 12. D5147, 1991 Test Method for Sampling and Testing Modified Bituminous Sheet Materials
 - 13. E108, Test Methods for Fire Test of Roof Coverings
- B. ASCE-7 Wind uplifts requirements for geographical area.
- C. Federal Specifications (FS)
 - 1. TT-S-00230C
- D. National Roofing Contractors Association (NRCA)
 - 1. Roofing and Waterproofing Manual

- E. Single Ply Roofing Institute (SPRI)
- F. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
 - 1. Architectural Sheet Metal Manual
- G. Underwriters' Laboratories (UL)
 - 1. Fire Hazard Classifications
 - 2. Class 90-wind uplift.
- H. California Building Code (CBC)

1.4 SUBMITTALS

- A. Provide the following to the Owner prior to award of roofing work.
 - 1. Written certification from the roofing system manufacturer corporate officer certifying that the applicator is currently approved for installation of the specified roofing system.
 - 2. Descriptive product data including MSD sheets.
 - 3. Certification of Class A roof system.
 - 4. Sample copy of contractor's workmanship warranty.
 - 5. Sample copy of specified Manufacturer's warranty.
 - 6. Sample copy of Manufacturer's Architectural indemnification Agreement.
- B. TEST REPORTS: Submit copies of the bitumen manufacturer's test reports of the following information for each batch of bitumen furnished:
 - 1. Softening Point: ASTM D36.
 - 2. Flashpoint: ASTM D92.
 - 3. Acceptable Bitumen Temperatures: As recommended by the bitumen manufacturer and label EVT on containers. Furnish to the Architect two hand held, "8F" thermometers per ASTM E1 for kettle temperature checking. Keep thermometers at the site and accessible at all times. Provide kettle with operating thermometer, keep thermometer clean of bitumen.
- C. PRODUCT DATA: Submit brochures containing material samples, SDS, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
 - 1. Within four (4) weeks of award of contract, submit:
 - a. Minimum of two (2) samples of each sheet material and descriptive literature.
 - b. Manufacturer's specifications and other independent test data according to ASTM designation D-5147-91 "Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material" needed to prove compliance with specified requirements.
 - c. All other data and information to satisfy requirements of manufacturer on warranty needs.
 - d. A written statement from the roofing materials manufacturers corporate officer approving the installer and stating the intent to guarantee the completed project as specified.
 - e. Samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
 - f. Certified copy of ISO 9001 compliance.
- D. SHOP DRAWINGS: Indicate size and materials. Show locations and installation procedures. Include details of joints, attachments, fastening patterns, and clearances. Submit 1 electronic original and retain approved copies at the Site.

- E. MAINTENANCE PROCEDURES: Upon substantial completion of the project, deliver to Owner three (3) copies of manufacturer's printed instructions regarding care and maintenance of roof.
- F. Wind uplift calculation: roofing system manufacturer's engineering department shall provide a ASCE 7-10 calculation per CBC, Chapter 15. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for insulatin attachment.
- G. Plumbing calculation: roofing system manufacturer's engineering department shall provide a primary drain and overflow drain or overflow scupper calculation per CBC, Chapter 11. Calculations shall be stamped by a CA licensed mechanical engineer.
- H. Structural wind load calculation: underlayment manufacturer's engineering department shall provide a ASCE 7-10 calculation per CBC, Chapter 16. Calculations shall be stamped by a CA licensed structural engineer. Calculation shall diagrammatically show fastening pattern for structural deck attachment.
 - 1. Manufacturer shall provide on site verification structural deck meets loading requirements after roof have been removed.
- I. Litigation and settlements: provide a notorized statement from a corporate officer stating roofing system manufacturer has not settled litigation or paid fines to a public agency in excess of \$20 million dollars.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Roofing system manufacturer shall have a minimum of 10 years experience in manufacturing modified bitumen roofing products in the United States and be ISO 9001 certified.
- B. Installer Qualifications: Installer (Roofing) shall be specializing in modified bituminous roof application with minimum 5 years experience and who is certified by the roofing system manufacturer as qualified to install manufacturer's roofing materials.
 - 1. Installer shall be California C-39 licensed.
 - 2. Install shall have an office with 100 miles of the District office in order to provide prompt leak response during contractor warranty period.
- C. Regulatory Requirements:
 - 1. Classification by Underwriters' Laboratories, Inc. as a Class A roof covering.
 - 2. Roofing system shall be installed in accordance with ASCE-7 wind uplift requirements for geographical location and a 120 MPH 3-second gust wind speed zone with an importance factor of 1.15 based on IBC requirements. Wind-resistance loads listed below have a safety factor of 2.0 incorporated into the calculation.
 - 3. Follow local, state, and federal regulations of safety standards and codes. Refer to applicable building code or International Building Code for roofing system installation requirements and limitations.
- D. Installer's Field Supervision: Require Installer to maintain a full-time Supervisor/Forman on job site during all phases of modified bituminous sheet roofing work and at any time roofing work is in progress, proper supervision of workmen shall be maintained. A copy of the specification shall be in the possession of the Supervisor/Foremen and on the roof at all times.

- E. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction.
- F. Disqualification of Bidders: A bidder can be disqualified by the Architect or Owner for any of the following reasons, but not limited to:
 - 1. The failure to attend the Pre-Bid conference at the time and place so described under Bidding Dates.
 - 2. Incorrect use of the "Proposal" as provided by the Architect/Owner. Any changes in said format shall be accepted by the Architect/Owner only when requested and approved in writing prior to the bid opening. Changes in the Proposal after the opening of the bids will not be accepted.
 - 3. Lack of proficiency as shown by past work or incomplete work under other contracts which, in the judgement of the Architect/Owner might hinder or prevent the prompt completion of additional work if so awarded or any involvement in any legal actions which relate to past or present performance. This includes, but is not limited to lawsuits, court appointed actions, and/or ongoing litigation.
- G. Pre-installation Roofing Conference: Approximately 2 weeks before scheduled of commencement modified bitumen sheet roof system and associated work, meet at Project site with Installer, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, installers of rooftop units and other work in the around roofing that must precede or follow roofing work (including mechanical work if any), Architect/Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of the Work, including (where applicable) Owner's insurers, test agencies, and governing authorities. Objectives to include:
 - 1. Review foreseeable methods and procedures related to roofing work. Tour representative areas of roofing substrates (decks), inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
 - 2. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 3. Review roofing systems requirements (drawings, specifications, and other contract documents).
 - 4. Review required submittals, both completed and yet to be completed.
 - 5. Review and finalize construction schedule related to roofing work and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying, and material usage accounting procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
 - 8. Record (contractor) discussion of conference, including decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending. If substantial disagreements exist at conclusion of conference, determine how disagreements will be resolved and set date for reconvening conference.
 - 9. Review notification procedures for weather or non-working days.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store and handle roofing sheets in a dry, well-ventilated, weather-tight place to ensure no possibility of significant moisture exposure. Store rolls of felt and other sheet materials on pallets or other raised surface. Stand all roll materials on end. Cover roll goods with a canvas tarpaulin or other breathable material (not polyethylene).
- C. Do not leave unused rolled goods on the roof overnight or when roofing work is not in progress unless protected from weather and other moisture sources.
- D. Handle and store materials or equipment in a manner to avoid significant or permanent deflection of deck.

1.7 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the Roofing System Manufacturer will provide the following:
 - 1. Keep the Architect informed as to the progress and quality the work as observed.
 - 2. Provide job site inspections minimum three days per week by a full time employee of the manufacturer.
 - 3. Report to the Architect in writing, any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
 - 4. Confirm, after completion of the project and based on manufacturer's observations and tests, that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.8 PROJECT CONDITIONS

- A. Weather Condition Limitations: Do not apply roofing membrane during inclement weather or when a 30% chance of precipitation is expected.
- B. Do not apply roofing insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- D. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

1.9 SEQUENCING AND SCHEDULING

- A. Sequence installation of modified bituminous sheet roofing with related units of work specified in other sections to ensure that roof assemblies, including roof accessories, flashing, trim, and joint sealers, are protected against damage from effects of weather, corrosion, and adjacent construction activity.
- B. All work must be fully completed on each day. Phased construction will not be accepted.

1.10 WARRANTY

- A. Membrane Manufacturer upon completion of installation, and acceptance by the Owner and Architect, the manufacturer will supply to the Owner the Thirty (30) Year "No Dollar Limit" watertight warranty.
 - 1. Warranty shall cover the calculated wind speed.
 - 2. Sole source warranty for modified bitumen, metal roofing, metal wall panels, single ply membrane and penetration flashing material.
- B. Contractor will submit a minimum of a 5 year warranty to the membrane manufacturer with a copy directly to Owner.
- C. Membrane manufacturer will provide an annual inspection at the annual request of the owner for the life of the warranty.

PART 2 - PRODUCTS

2.1 GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.
 - 1. Design is based on Stressply, manufactured by Garland Co.
 - 2. Pre-approved equal as noted below.
- B. Provide products as specified. Prime bidding contractors proposing substitutes shall submit all required submittal information under 07 53 60, PART 1, 1.4 to The Owner's representative at least 10 days prior to bid due date. All substitutions have to be approved prior to bidding. No substitutions will be accepted after bidding or contract award. All bidders will have an opportunity to bid on any substitute system that is approved. Substitution requests will not be accepted from anyone other than prime bidding contractors who have attended the prebid walkthrough.
- C. Any item or materials submitted as an alternate to the manufacturer specified must comply in all respects as to the quality and performance, including job site investigation of the brand name specified. The Owner shall be the sole judge as to whether or not an item submitted as an equal is truly equal. Should the contractor choose to submit on the equal basis, he shall assume all risk involved, monetary or otherwise, should the Owner find it unacceptable. The Contractor is warned to obtained prior approval at least ten days prior to bid date of any material not specified. The following must be included for materials submitted for substitutions: (five copies)
 - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - 2. For products:
 - a. Product identification, including manufacturer's literature and manufacturer's name and address.
 - b. Current certificate from an accredited testing laboratory comparing the physical and performance attributes of the proposed material with those of the specified materials substantiating, SBS Rubber Content, Ash Content, Low Temperature Flexibility, Tensile Strength of finished membranes according to ASTM D-5147. Test results must be dated, notarized, and on testing laboratory stationary.
 - c. A five gallon sample of any adhesive, coating, mastic or sealant and a 3' X 5', sample of any sheeting goods as may be specified. Manufacturer's

labels must be on containers, smaller containers may be submitted if manufacturer's labels are attached.

- d. Material Safety Data Sheets providing all pertinent data as to flammability, combustibility, toxicity, etc.
- e. List of at least five (5) local jobs within 50 miles, where the proposed alternate material was used under similar conditions. These jobs must be available for inspection by the Owner. Names, phone numbers, and a copy of manufacturers warranty on each job are required for verification.
- f. Notarized statement from the Roofing System Manufacturer, signed by a corporate officer of the Corporation with the Corporate Seal affixed thereto stating in writing that:

- All Bidding Documents have been inspected.
- The project site has been inspected.
- The roofing system manufacturer will provide field inspections on a daily basis, on during, and until all construction work is completed and accepted by the Owner. Inspections shall be performed by a full time employee of the manufacturer. These inspections shall be provided to the Owner at no charge.
- Furnish the 30 year NDL "No Dollar Limit" warranty as stipulated in the Contract Documents.

3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Data related to changes in construction schedule.
6. Relation to separate contracts.

D. In making request for substitution, Bidder / Contractor represents:

1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
2. He will provide the same guarantee for substitution as for product or method specified.
3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
4. He waives all claims for additional cost related to substitution which consequently become apparent.
5. Cost data is complete and includes all related cost under his contract or other contracts which may be affected by the substitution.
6. He will reimburse the Owner for all redesign cost substitute may require.

E. Substitutions will not be considered if:

1. Product or method to be considered does not have a minimum of ten (10) years of successful performance in roofing and reroofing applications in the United States.
2. Any discrepancies in the test data, or if the tests or submittals are incomplete.
3. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 2.01.
4. Acceptance will require substantial revision of Contract Documents.

2.2 BITUMINOUS MATERIALS

- A. Asphalt Primer: V.O.C. compliant, ASTM D-41. Garla-Prime by Garland or pre approved equal.
- B. Asphalt Roofing Mastic: V.O.C. compliant, ASTM D-2822, Type II. Flashing Bond by Garland or pre approved equal.
- C. Asphalt: Shall meet ASTM Specification D-312 Type IV.
- D. Elastomer: V.O.C. compliant, Trowelable asphalt elastomeric mastic. Garla-Flex by Garland or pre-approved equal.

2.3 SHEET MATERIALS

- A. Roofing Membranes
 - 1. Base Sheet: A fiberglass reinforced, asphalt coated sheet, having an average weight of 28 pounds per square recommended by Garland.
 - 2. Modified Roof Membrane (Base Ply): 120 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane with high strength, fiberglass reinforcement. Stressbase 120 by Garland, or pre-approved equal.
 - 3. Modified Roof Membrane (Finish Ply): urethane resin modified roof membrane reinforced with asphalt-coated glass fiberglass scrim, with granulated surface. Stressply Plus FR Mineral by Garland or pre-approved equal.
 - 4. Stripping Membrane: 60 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane with high strength, polyester/fiberglass reinforcement. HPR Tribase Premium by Garland, or pre-approved equal.
 - 5. Finish Surfacing (CRRC): Single-component, acrylic/urethane-dispersion liquid coating, Pyramic Plus by Garland, or pre-approved equal.
- B. Flashing Membrane: Two ply modified base flashing system.
 - 1. Base Ply: 120 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane with high strength, polyester/fiberglass reinforcement. Stressbase 120 by Garland, or pre-approved equal.
 - 2. Finish Ply: urethane resin modified roof membrane reinforced with asphalt-coated glass fiberglass scrim, with granulated surface. Optimax FR Mineral by Garland or pre-approved equal.
 - 3. Finish Surfacing (CRRC): Single-component, urethane modified acrylic liquid coating, Pyramic Plus by Garland, or pre-approved equal.

2.4 INSULATION

- A. Polyisocyanurate Roof Insulation for low slope asphalt roofing system:

Provide thicknesses of insulation as indicated, and tapered insulation where indicated on plans. Provide combination of types and thicknesses to provide a complete system.

 - 1. Surface Burning Characteristics: Provide assembly with composite flame spread rating of 25 or less and smoke developed of 50 or less, as determined in accordance with ASTM E 84.
 - 2. Closed cell polyisocyanurate foam.

- a. R-Value: 11 min.
3. Insulation board shall meet the following requirements:
 - a. UL, WH or FM listed under Roofing Systems
 - b. Federal Specification HH-I-1972, Class 1
 - c. Dimensional Stability ASTM D2126 2% max.
 - d. Compressive Strength ASTM D1621 25 psi min.
 - e. Vapor Permeability ASTM E-96 1 perm max.
 - f. Foam Core Density ASTM D1622.
 - g. Water Absorption ASTM C209 <1 %
 - h. Flame Spread ASTM E 84, 25 max.
 - i. R-Factor: 5.6 per inch thickness ASTM C 518 (Design Value).
 - j. Tapered insulation slope: ¼" per 12".
- B. Asphalt roof Protection Board: Premolded semi-rigid coated wood fiber board 1/2 inch thickness.
 1. ½" StructoDek HD by Celotex or approved equal.

2.5 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes / shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
- B. Fasteners:
 1. Shall be Factory Mutual approved and as recommended by the manufacturer for the specific application.
 2. Fastener for Brick: Shall be 1/4 inch x 2 inches, stainless steel nail, one piece unit, flat head, as manufactured by Rawl Zamac Nailin, or approved equal.
 3. Fastener for Wood: Shall be a #14 Factory Mutual approved fastener, fluorocarbon coated, with CR-10 coating. A minimum 0.200 inch diameter shank and 0.250 inch diameter thread. To be used with Factory Mutual approved, round pressure plates or bar, and having a fluorocarbon CR-10 coating, when subjected to 30 Kesternich cycles (DIN 50018) shows less than ten percent (10%) red rust which surpasses Factory Mutual Approval Standard 4470 as manufactured by Olympic Manufacturing Group, Inc., or pre-approved equal.
 4. Roofing Nails: Stainless steel, 316, type, size as required to suite application, minimum 11 gauge with 3/8 inch diameter head, minimum 1-1/2 inches in length.
 5. Iron-Lok Toggle: Shall be a toggle bolt with minimum 0.215 inch diameter shank and minimum 20 threads per inch, with a 2-1/2 inch wing span, with wing activated adhesive and pressure plate, as manufactured by OMG or Tru-fast
- C. Metal Discs: Flat discs or caps of plastic sheet metal not lighter than 28 gauge and not less than 1-inch in diameter. Discs shall be formed to prevent dishing. Bell or cup-shaped caps are not acceptable.
- D. Walk-way Pads: 180 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane with high strength, polyester/fiberglass reinforcement. This membrane is designed for torch applications and has a burn-off backer that indicates when the material is hot enough to be installed. STRESSPLY IV Mineral by Garland or pre-approved equal. Provide walk pads as indicated on the roof plan.

- E. Pipe supports: see specification 07 72 00 ROOF ACCESSORIES.
- F. Rosin: 20 mil Ramboard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate surfaces to receive modified bitumen sheet roofing system and associated work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing modified bitumen sheet system.
- B. Insurance / Code Compliance: Where required, install and test modified bitumen sheet roofing system to comply with governing regulations and specified insurance requirements.
- C. Protect other work from spillage of modified bitumen roofing materials, and prevent liquid materials from entering or clogging drains and conductors. Replace or restore other work damaged by installations of modified bituminous sheet roofing system work.
- D. Coordinate installing roofing system components so that insulation and roofing plies are not exposed to precipitation or left exposed overnight. Provide cut-offs at end of each day's work to cover exposed ply sheets and insulation with two courses of #15 organic felt with joints and edges sealed with roofing cement. Remove cut-offs immediately before resuming work.
- E. Substrate Joint Penetrations: Prevent bitumen from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
- F. Apply roofing materials as specified herein unless recommended otherwise by manufacturer's instructions. Keep roofing materials dry before and during application. Do not permit phased construction. Complete application of roofing plies, modified sheet and flashing in a continuous operation. Begin and apply only as much roofing in one day as can be completed that same day.
- G. Asphalt Bitumen Heating: Heat and apply bitumen according to EVT Method as recommended by NRCA. Do not raise temperature above minimum normal fluid-holding temperature necessary to attain EVT (plus 5 °F at point of application) more than 1 hour prior to time of application. Determine flash point, finished blowing temperature, EVT, and fire-safe handling temperature of bitumen either by information from manufacturer or by suitable test. Do not exceed recommended temperature limits during bitumen heating. Do not heat to a temperature higher than 25° below flash point. Discard bitumen that has been held at temperature exceeding finishing blowing temperature (FBT) for more than 3 hours. Keep kettle lid closed except when adding bitumen.

- H. Bitumen; Mopping Weights: For interply mopping, apply bitumen at the rate of approximately 25lb of asphalt per roof square (plus or minus 25 percent on a total job average basis).

3.3 INSULATION INSTALLATION

- A. Wood decks shall be covered with a rosin sheet, prior to mechanically fastening insulation as follows:
1. Install in accordance with manufacturer's current published application instructions and stamped ASCE-7 wind uplift calculation. Submit perimeter, field and corner fastening patterns and cite all ASCE-7 data pertaining to the fastening pattern to the Architect for review.
 2. Mechanically attach base layers of thermal insulation and mop the cover board if thermal insulation is installed.
 3. If no thermal insulation to be installed mechanically attach cover board to structural deck.

3.4 STANDARD ROOFING SHEET INSTALLATION

- A. BASE PLY INSTALLATION
1. Install modified membrane in 25-30 lbs. per square of bitumen, shingled. Shingle in proper direction to shed water on each area of roof.
 2. Lap ply sheet ends eight inches. Stagger end laps twelve inches minimum.
 3. Extend plies two inches beyond top edges of cants at wall and projection bases.
 4. Install base flashing plies to all perimeter and projections details.
- B. MODIFIED MEMBRANE APPLICATION
1. The modified membrane shall then be solidly bonded to the base layers with specified asphalt at the rate of 35 lbs. per 100 square feet.
 2. The roll must push a puddle of asphalt in front of it with asphalt slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
 3. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
 4. Subsequent rolls of modified shall be installed across the roof as above with a minimum of 4" side laps and 8" end laps. The end laps shall be staggered. The modified membrane shall be laid in the same direction as the underlayers, but the laps shall not coincide with the laps of the base layers.
 5. Apply asphalt no more than five feet ahead of each roll being embedded.
 6. Extend membrane 2" beyond top edge of all cants in full moppings of the specified asphalt as shown on the drawings.
 7. Broadcast minerals into the bleed out of asphalt while bitumen is still hot to achieve uniform color throughout.
 8. Coat entire roof with 1 gallon per sq. per coat. 2 coats.
- C. PLUMBING STACK
1. Minimum stack height is 8".
 2. Run base ply system over the roof. Seal the base of the stack with elastomer.
 3. Prime flange of new sleeve. Install properly sized sleeves set in a 1/4" bed of roof cement.

4. Install base ply in bitumen.
 5. Install stripping membrane in bitumen.
 6. Install modified roof membrane.
 7. Caulk the intersection of the membrane and the with elastomeric sealant.
 8. Turn sleeve a minimum of 1" down inside of stack.
- D. PITCH POCKET WITH UMBRELLA AND FLANGED PENETRATIONS
1. Run all plies up to the penetration.
 2. Pitch pans shall be at least 4" deep. The pitch pocket should extend at least 1" beyond the penetration in all directions. All corners and seams should be soldered tight and watertight.
 3. Place the pitch pocket over the penetration and prime all flanges.
 4. Strip in flange of pitch pocket with one ply of base ply. Extend 6" onto field of roof.
 5. Install second layer of stripping membrane extending 9" onto field of roof.
 6. Install modified roof membrane.
 7. Fill pitch pan half full with non-shrink grout. Let this cure and top off with elastomer.
 8. Caulk joint between roof system and pitch pan with roof cement.
 9. Place a watershedding bonnet over the top of the pitch pocket and clamp the top with a drawband collar. Caulk the upper edge of the band with sealant.

3.5 FLASHING MEMBRANE INSTALLATION

- A. All curb, wall and parapet flashings shall be sealed with an application of mastic and mesh on a daily basis. No condition should exist that will permit moisture entering behind, around, or under the roof or flashing membrane.
- B. Prepare all masonry walls, penetrations and expansion joints to be flashed and where shown on the drawings, with asphalt primer at the rate of one gallon per 100 square feet. Allow primer to dry tack free.
1. At wood walls mechanically attach a Type II base sheet to wall.
- C. The two ply modified flashing system will be used as the flashing membrane and will be adhered to the underlying substrate by heat fusing unless otherwise noted in these specifications and nailed off 8" O.C. at all vertical surfaces. All base flashing shall extend up wall or curb in the machine direction of the membrane.
- D. The entire sheet of flashing membrane must be solidly adhered to the substrate.
1. Install base flashing in hot and cap sheet in mastic.
- E. Counter flashing, cap flashings, expansion joints, and similar work to be coordinated with modified bitumen roofing work are specified in other sections.
- F. Roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices to be coordinated with modified bituminous roof system work are in other sections.

3.6 FLASHING AT WALLS AND PENETRATIONS

- A. Minimum flashing height is 8". Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
- B. Set cant in bitumen. Run all plies over cant a minimum of 2".

- C. Install bottom flashing ply covering wall or penetration with 6" on to field of roof. After all laps have been tested, and a complete positive bond has been achieved, the applicator shall heat the seam edge and trowel along the seam edge. Troweling shall continue until a sloped, beveled edge has been produced. All base flashing shall extend up wall or curb in the machine direction of the membrane.
- D. The second ply shall be modified top flashing ply installed over the bottom flashing ply and 9" on to field of roof in mastic. . After all laps have been tested, and a complete positive bond has been achieved, the applicator shall heat the seam edge and trowel along the seam edge. Troweling shall continue until a sloped, beveled edge has been produced. . All base flashing shall extend up wall or curb in the machine direction of the membrane.
- E. Secure termination bar through flashing and into wall 8" O.C. and seal top edge to prepared surface with a three course application of PVC mesh and asphaltic mastic.
- F. Coat base flashings after 30 days.

3.9 FIELD QUALITY CONTROL

- A. Testing:
 - 1. Re-test until roof is shown to be watertight.
- B. Manufacturer Field Services: Provide three times weekly site inspection for a minimum of one (1) hour during active roofing operations by an experienced, full time employee of the roofing manufacturer. Submit written reports weekly.

3.10 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Touch up minor abrasions and exposed fasteners with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
 - 1. No exposed sealant or visible raw metal.
- C. Sweep and remove chips, shavings, and dust from roof on a daily basis during installation period. Leave installed work clean, free from grease, finger marks and stains.
- D. Upon completion of installation, remove scraps and debris from project site.

3.11 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 63 00

ROOF RELATED SHEET METAL

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable to this Section.

PART I - GENERAL

1.1 SECTION INCLUDES

- A. It is the intent of this Section that the Work shall:
 - 1. conform to all applicable building code requirements and of authorities having jurisdiction;
 - 2. include all shop and field formed sheet metal work shown on drawings, specified or required, including, but not limited to:
 - a. Roof penetration sleeves and hood and umbrella counterflashing
 - b. Metal counterflashing
 - c. Expansion joint
 - d. Roof drains
 - e. Scuppers
 - f. Metal perimeter edge
 - g. Gutters, Downspouts, Splash Blocks and Splash Pans
 - h. One-way roof moisture relief vents
 - i. Metal gravity vents
 - j. Metal heat exhaust vents
 - k. Sanitary vent pipes
 - l. Pipe box
 - m. Copings, trim and miscellaneous sheet metal accessories.
 - 3. be part of the Work of Section 07 51 14, Built-Up Roofing; and
 - 4. be performed by a roof membrane contractor.

1.2 RELATED WORK

- A. Section 07 31 13 – Asphalt Shingle Roofing
- B. Section 07 41 12 – Metal Wall Panels
- C. Section 07 41 13 – Metal Roof Panels
- D. Section 07 53 60 – Garland Modified Bitumen Roofing
- E. Section 07 72 00 - Roof Accessories
- F. All Sections of Work relating to or affecting the roofing system, including mechanical, plumbing and electrical items.

1.3 REFERENCES

- ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
- B. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Wall Underlayment for Ice Dam Protection.
- C. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.
- D. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Wall Panel Systems by Uniform Static Air Pressure Difference.
- E. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Wall Panel Systems.

- F. California Code of Regulations, Title 24, Part 2, California Building Code (CBC), International Building Code
- G. California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, "CAL-Green".
- H. Sheet Metal and Air Conditioning Contractors National Association: "Architectural Sheet Metal Manual".
- I. ASTM E108 – Standard Test Methods Fire Tests of Wall Coverings.
- J. ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Wall and Siding Systems by Uniform Static Air Pressure Difference.
- K. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7-10 Minimum Design Loads for Buildings and Other Structures.

1.4 SUBMITTALS

- A. Product Data:
 - 1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
 - 2. Manufacturer's installation instructions.
- B. Shop Drawings: Indicating sizes, configurations, details of attachment to related and adjacent work, materials, and finishes.
- C. Samples:
 - 1. Full range of finish colors for Architect's selection.
 - 2. 12 inch long sample of each specified item with approved finish.
 - 3. Provide full size mockup of all shop built assemblies.

1.5 QUALITY ASSURANCE

- A. Single Source Responsibility: Fabricator and installer of roof-related flashing and accessories shall be the same as the membrane roof installer.
- B. Comply with governing codes and regulations of authorities having jurisdiction.
- C. ANSI / SPRI ES-1: Fabricate and install sheet metal edge flashings and copings to comply with requirements of ANSI/SPRI ES-1 for 90 MPH wind speed zone and wind resistance loads.

1.6 INSTALLATION CONFERENCE

- A. Refer to Section 01 31 13, Project Coordination.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, handle and store materials in accordance with manufacturer's instructions.
- B. Handle and store materials and equipment in such a manner as to avoid damage.
- C. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day. Any exception must be in written form. Do not place materials or equipment in such a manner as to overload structure.

1.8 WARRANTIES

- A. Manufacturer's Product Warranty:
 - 1. Manufacturer's standard 20 year Kynar 500 or Hylar 5000 Finish warranty signed by the manufacturer, guaranteeing covering failure of the fluoropolymer finish during the warranty period.
 - 1. Failure is defined to include, but not be limited to:
 - a. Deterioration of finish, such as fading, discoloring, peeling, cracking, corroding, etc.
 - b. Leaking water within building or construction.
 - 2. Correction may include repair or replacement of failed product.
- B. Roofing Contractor's Warranty:
 - 1. Contractor shall warrant the sheet metal work and related work to be free from defects in workmanship and materials, and that the metal flashings will be and remain watertight, for a period of five (5) years from date of Substantial Completion.
 - 2. Defects shall include, but not be limited to:
 - a. Leaking water or bitumen within building or construction.
 - b. Becoming loose from substrate.
 - c. Loose or missing parts.
 - d. Finish failure as defined above.

PART 2 - PRODUCTS

GENERAL

- A. When a particular trade name or performance standard is specified it shall be indicative of a standard required.
 - 1. Design is based on R-mer Force Edge Metal and R-mer Coping, manufactured by Garland Co.
 - 2. Pre-approved equal as noted below.
- B. Provide products as specified. Prime bidding contractors proposing substitutes shall submit all required submittal information under 07 60 00, PART 1, 1.4 to The Owner's representative at least 10 days prior to bid due date. All substitutions have to be approved prior to bidding. No substitutions will be accepted after bidding or contract award. All bidders will have an opportunity to bid on any substitute system that is approved. Substitution requests will not be accepted from anyone other than prime bidding contractors who have attended the prebid walkthrough.
- C. Any item or materials submitted as an alternate to the manufacturer specified must comply in all respects as to the quality and performance, including job site investigation of the brand name specified. The Owner shall be the sole judge as to whether or not an item submitted as an equal is truly equal. Should the contractor choose to submit on the equal basis, he shall assume all risk involved, monetary or otherwise, should the Owner find it unacceptable. The Contractor is warned to obtain prior approval at least ten days prior to bid date of any material not specified. The following must be included for materials submitted for substitutions: (five copies)
 - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - 2. For products:

- a. Product identification, including manufacturer's literature and manufacturer's name and address.
 - b. Material Safety Data Sheets providing all pertinent data as to flammability, combustibility, toxicity, etc.
 - c. List of at least five (5) local jobs within 50 miles, where the proposed alternate material was used under similar conditions. These jobs must be available for inspection by the Owner. Names, phone numbers, and a copy of manufacturer's warranty on each job are required for verification.
 - d. Notarized statement from the System Manufacturer, signed by a corporate officer of the Corporation with the Corporate Seal affixed thereto stating in writing that:
 - All Bidding Documents have been inspected.
 - The project site has been inspected.
 - The wall system manufacturer will provide field inspections on a daily basis, on during, and until all construction work is completed and accepted by the Owner. Inspections shall be performed by a full time employee of the manufacturer. These inspections shall be provided to the Owner at no charge.
 - Furnish the 30 year warranty as stipulated in the Contract Documents.
3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 4. Itemized comparison of proposed substitution with product or method specified.
 5. Data related to changes in construction schedule.
 6. Relation to separate contracts.
- D. In making request for substitution, Bidder / Contractor represents:
1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
 2. He will provide the same guarantee for substitution as for product or method specified.
 3. He will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 4. He waives all claims for additional cost related to substitution which consequently become apparent.
 5. Cost data is complete and includes all related cost under his contract or other contracts which may be affected by the substitution.
 6. He will reimburse the Owner for all redesign cost substitute may require.
- E. Substitutions will not be considered if:
1. Product or method to be considered does not have a minimum of ten (10) years of successful performance of system applications in the United States.
 2. Any discrepancies in the test data, or if the tests or submittals are incomplete.
 3. They are indicated or implied on Shop Drawings or Project Data Submittals without formal request submitted in accordance with Paragraph 2.01.
 4. Acceptance will require substantial revision of Contract Documents.

2.2 MATERIALS

- A. Materials: Minimum gauge of steel or thickness of Aluminum to be specified in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc. recommendations.

- B. R-Mer Force Flash-less Snap-On Fascia Cover and Splice Plate
 - 1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 22 gauge, chemically treated, commercial quality.
- C. R-Mer Edge Coping Cap Cover and Splice Plate
 - 1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 22 gauge, chemically treated, commercial quality.
- A. Gutters:
 - 1. Aluminum, ASTM B209, alloy 3105-H14, in thickness of 0.040" nom. for a 4" face or 0.050" nom. for larger than 4".
- E. R-Mer Edge Coping Chairs
 - 1. Zinc-coated steel, ASTM A653, coating designation G-90, in thickness of 0.0635 nom./ 16 gauge, 36" to 48" by coil length, chemically treated, commercial or lock-forming quality.
- F. Finishes
 - 1. Exposed surfaces for coated panels:
 - a. Steel Finishes: fluorocarbon finish. Epoxy primer baked both sides, .2-.25 mils thickness as approved by finish coat manufacturer. Weathering finish as referred by National Coil Coaters Association (NCCA).

PROPERTY	TEST METHOD	FLUOROCARBON*
Pencil Hardness	ASTM D3363 NCCA II-2	HB-H
Bend	ASTM D-4145 NCCA II-19	O-T
Cross-Hatch Adhesion	ASTM D3359	no loss of adhesion
Gloss (60° angle)	ASTM D523	25+/-5%
Reverse	ASTM D2794 adhesion	no cracking or loss of Impact
Nominal Thickness	ASTM D1005 Primer Topcoat	0.2 mils 0.8 mils
TOTAL	1.0 mils	

- b. Color shall be as specified
 - 2. Exposed and unexposed surfaces for mill finish flashing, fascia, and coping cap, shall be as shipped from the mil

2.3 RELATED MATERIALS AND ACCESSORIES

- A. Metal Primer: Zinc chromate type.

- B. Plastic Cement: ASTM D 4586
- C. Sealant:
 - 1. Reglet and general use: TiteBond by IMETCO.
 - 2. Flashless edge metal system: GreenLock Sealant XL structural sealant by Garland.
- D. Underlayment: R-mer Seal by Garland.
- E. Fasteners:
 - 1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
 - 2. Fastening shall conform to Factory Mutual requirements or as stated on section details, whichever is more stringent.
- F. Gutter and Downspout Anchorage Devices: Material as specified for system.
- G. Gutter Supports: Straps. Fabricate from material of double thickness of gutter fabrication, minimum.
- H. Wire bulb strainers for gutters: stainless steel wire bulb.
- I. Gutter screens: powder coated aluminum.
 - 1. www.greenutterscreens.com or approved equal.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation of preformed metal system until substrates have been properly prepared.
 - 1. Determine if work of other trades which penetrates the system.
 - 2. Verify pipes, sleeves, or vents through system are solidly set, reglets are in place, and nailing strips located.
 - 3. Verify system termination, base flashings and gutter flanges are in place, sealed, and secure.
 - 4. Notify Architect in writing if substrates are not suitable for application of panel system.
 - 5. Do not proceed with installation until substrates are acceptable.
- B. Structural surfaces: Smooth, even, sound, surface dry 19 percent maximum, clean and free of depressions, waves, or projections before material is applied.
 - 1. Examine the alignment and placement of the building structure and substrate. Correct any objectionable warp, waves or buckles in the substrate before proceeding with installation of the preformed metal system. The installed system will follow the contour of the structure and may appear irregular if not corrected.
 - b. Apply no materials during wet weather or on wet surface.

3.2 INTERFACE WITH OTHER WORK

- A. Coordinate with system accessories, miscellaneous sheet metal accessories, piping vents and other items specified in related sections penetrating metal system work. Avoid conflict or omission in waterproofing systems and provide watertight installation.

3.3 PREPARATION

- A. Verify field dimensions prior to ordering materials.

1. Establish straight side and crosswise benchmarks.
 2. Check rectangular walls for squareness and straightness. Gable ends may not be straight; set a true line for the gable clips and flashing with stringline.
- B. Broom clean wood sheathing prior to installation of system.
- C. Coordinate system work with provisions for system drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed system will be free of leaks.
- D. Remove protective film from surface of system immediately prior to installation. Strip film carefully, to avoid damage to prefinished surfaces.
- E. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by system manufacturer.
- F. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.4 MANUFACTURED SHEET METAL SYSTEMS

- A. Furnish and install manufactured fascia and coping cap systems in strict accordance with manufacturer's printed instructions.
- B. Provide factory-fabricated accessories including, but not limited to, fascia extenders, miters, scuppers, joint covers, etc. refer to Source limitation provision in Part 1.

3.5 SHOP-FABRICATED SHEET METAL

- A. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.
- B. Hem exposed edges.
- C. Angle bottom edges of exposed vertical surfaces to form drip.
- D. Lap corners with adjoining pieces fastened and set in sealant.
- E. Form joints for gravel stop fascia system, coping cap with a 3/8" opening between sections. Back the opening with an internal drainage plate formed to the profile of fascia piece.
- F. Install sheet metal to comply with referenced ANSI/SPRI, SMACNA and NRCA standards.
- G. Fabricate minimum 20' lengths.

3.6 FLASHING MEMBRANE INSTALLATION

- A. Scupper Through Roof Edge
1. Install scupper box in a one fourth (1/4) inch bed of mastic. Assure all box seams are soldered and have minimum four (4) inch flange. Make sure all corners are closed and soldered.
 2. Prime metal edge at a rate of one hundred (100) square feet per gallon and allow to dry.
- B. Flash-less Snap-On Fascia Detail with Extruded Aluminum Base Anchor
1. Position base plies of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations. Cap sheet shall stop at the edge of the roof and shall not turn over the edge of the nailer.

ROOF RELATED SHEET METAL

2. Extruded base anchor: Apply two 1/4" beads of GreenLock Sealant XL on the bottom surface of the top flange of the extruded anchor. This equate to one cartridge per 10' section.
3. Set the extruded anchor on the edge and face fasten through pre-punched slots every 12 inches o.c. for the 5.75 inch face fascia, and 12 inches o.c. staggered for any fascia size greater than 5.75 inches.
4. Install compression seals every 40" o.c. in the slots located at the top of the extruded anchor.
5. Install fascia cover by hooking the cover over the back hook of the extruded anchor. Rotate the cover forward and when in the vertical position, press downward firmly until "snap" occurs and cover is engaged along entire length of miter.
6. Install splice plate at each end of the extruded anchor.

C. Edge Metal With Gutter

1. Position base plies of the Built-Up and/or Modified Roofing membrane over the roof edge covering nailers completely, fastening eight (8) inches on center. Install manufacturer's membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
2. Install gutter and strapping fastening six (6) inches on center.
3. Set metal flange into roofing cement, nail every three (3) inches on center, and prime at a rate of one hundred (100) square feet per gallon.
4. Strip in edge metal with base flashing membrane extending six (6) inches into roof field, followed with a cap sheet extending nine (9) inches into the roof field. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.

D. Snap-On Coping Cap Detail

1. Install Miters first.
2. Position base flashing of the Built-Up and/or Modified Roofing membrane over the wall edge covering nailers completely, fastening eight (8) inches on center. Install membrane and cap sheet with proper material and procedure according to manufacturer's recommendations.
3. Install minimum sixteen (16) gauge, sixteen (16) inch long by specified width anchor chair at [Contact Garland Representative] feet on center.
4. Install six (6) inch wide splice plate by centering over sixteen (16) inch long by specified width anchor chair. Apply two beads of sealant to either side of the splice plate's center. Approximately two (2) inches from the coping cap joint. Install Coping Cap by hooking outside hem of coping on outside face of anchor chair. Press downward on inside edge of coping until "snap" occurs and hem is engaged on the entire chair.

3.7 CONSTRUCTION WASTE MANAGEMENT

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

3.8 FINAL INSPECTION

- A. At completion of installation and associated work, meet with Contractor, Architect, installer, installer of associated work, Owner, roofing system manufacturer's representative, and other representatives directly concerned with performance of roofing system.
- B. Inspect work and flashing of roof penetrations, walls, curbs, and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.

- C. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- D. Notify the Owner upon completion of corrections.
- E. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.
- F. Immediately correct roof leakage during construction. If the Contractor does not respond within twenty-four (24) hours, the Owner will exercise rights to correct the Work under the terms of the Conditions of the Contract.

3.9 DEMONSTRATION AND TRAINING

- A. At a time and date agreed to by the Owner, instruct the Owner's facility manager, or other representative designated by the Owner, on the following procedures:
 - 1. Troubleshooting procedures
 - 2. Notification procedures for reporting leaks or other apparent roofing problems
 - 3. Maintenance
 - 4. The Owner's obligations for maintaining the warranty in effect and force.

3.10 FIELD QUALITY CONTROL

- A. Testing:
 - 1. Re-test until system is shown to be weathertight.
- B. Manufacturer Field Services: Provide daily site inspection for a minimum of one (1) hour during active system operations by an experienced, full time employee of the system manufacturer. Submit written reports weekly.

3.11 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Touch up minor abrasions and exposed fasteners with matching paint provided by panel manufacturer. Remove and replace panels that cannot be satisfactorily touched up.
 - 1. No exposed sealant or visible raw metal.
- C. Sweep and remove chips, shavings, and dust from system on a daily basis during installation period. Leave installed work clean, free from grease, finger marks and stains.
- D. Upon completion of installation, remove scraps and debris from project site.

3.12 PROTECTION

- A. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect system until completion of project.
- B. Touch-up, repair, or replace damaged material or accessories before date of Substantial Completion.

END OF SECTION

SECTION 07 22 00

ROOF ACCESSORIES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 INSTALLATION RESPONSIBILITY

- A. In addition to the items normally a part of this Section, coordinate the installation of roof accessory curbs and pipe flashings and equipment supports that may be specified elsewhere.
- B. Coordinate the Work specified herein with the following Work:
 - 1. Roofing
 - 2. Roofing sheet metal
 - 3. Mechanical equipment
 - 4. Plumbing

1.2 REFERENCES

- A. Federal Specifications (FS)
 - 1. TT-S-00227E
- B. National Roofing Contractors Association (NRCA)
- C. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
 - 1. Architectural Sheet Metal Manual

1.3 SUBMITTALS

- A. Product Data: Submit schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
- B. Shop Drawings: Indicate size, material, and finish. Show locations and installation procedures. Include details of joints, attachments, and clearances.

1.4 PRE-INSTALLATION CONFERENCE

- A. Refer to Section 01 31 13 – Project Coordination.

1.5 WARRANTY

- A. Warranty the Work specified herein for one (1) year against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials and workmanship.
- B. Defects shall include, but not be limited to, the following:
 - 1. Noticeable deterioration of finish
 - 2. Leakage of water into the building or within the construction.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Specifications are based on products of named manufacturers. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.

2.2 PREFABRICATED ROOF CURBS

- A. Frames:
 - 1. Material: ASTM A 653 G90 hot-dipped galvanized steel.
 - a. Minimum 18 gauge, and as engineered by manufacturer.
 - b. Minimum 18 gauge for curbs supporting HVAC units
 - c. Minimum 20 gauge for expansion joint curbs.
 - 2. Corners: Mitered and welded (welds are micro sealed and prime painted after fabrication). Bolted connections not accepted.
 - 3. Base Plates: Integral to frame and welded.
 - 4. Internally reinforced with galvanized 1 inch by 1 inch by 12 gauge angles for curbs exceeding 3 foot length. Reinforce internal bulkhead at equipment curbs to support lateral loads.
 - 5. Wood Nailers: Factory installed, pressure treated. Size and width as suitable for support of items installed on curbs.
- B. Insulation: Factory installed 1-1/2 inch thick three-pound density fiberglass insulation.
- C. Curb Height: Minimum 8 inch above finished roof.
- D. Construct curbs to match roof slope with plumb and level top surface for mounting mechanical equipment.
- E. Gasketing: 1/4 inch thick, one (1) inch wide at roof top units.
- F. Counterflashing: 18 gauge galvanized steel.
- G. Counterflashing Cap: Stainless steel.
- H. Cants:
 - 1. Non-canted curb style installs either under or on top of metal decks with insulation.
 - 2. Cants shall be provided under Section 07 52 19 - Roofing
- I. All insulated roof curbs shall be structural and shall include calculations signed and sealed by a registered Structural Engineer. Refer to installation drawings for any additional structural requirements. If curbs do not span a minimum of two bar joists, only two angles will be required. Coordination mechanical equipment weight loading on the roof with Structural Engineer.
- J. Approved Manufacturers:
 - 1. Custom Curb, Inc.
 - 2. Roof Products, Inc.

2.3 PIPE SUPPORTS

- A. Gas Pipe Supports:
 - 1. Provide strut and hanger type support with recycled plastics and carbon black for UV protection bases (10 inches x 16 inches x 3 inches; 6 lbs. each); Model Type PP-10 with strut & hanger for lines 2-1/2 inches and smaller, Model Type PS-1-2 with hanger for lines 3 inches and larger.
 - 2. As manufactured by Portable Pipe Hanger, Inc.; Miro Industries Inc.; MAPA Products; or Architect approved equal.
- B. Electrical Conduit / Condensate Lines:
 - 1. Provide strut type support with recycled plastics and carbon black for UV protection bases (10 inches x 16 inches x 3 inches; 6 lbs. each), install with hold clips ordered as an accessory; Model Type PP-10 with strut. Model Type PS-1-2 with hanger for lines 3 inches and larger.
 - 2. As manufactured by Portable Pipe Hanger, Inc.; Miro Industries Inc.; MAPA Products; or Architect approved equal.
- C. Chill Water Lines:
 - 1. Provide strut and hanger type support with recycled plastics and carbon black for UV protection bases (size as required); Model Type PS-1-2 and Model Type PSE-2-2 as required.
 - 2. As manufactured by Portable Pipe Hanger, Inc.; Miro Industries Inc.; MAPA Products; or Architect approved equal.
- D. Installation:
 - 1. Locate as indicated by Drawing at no greater than 8 feet-0 inches o.c.
 - 2. Provide protective traffic pads below each support, tacked in place with approved mastic or adhesive.
 - 3. Install hold down clips if indicated on the drawings or required.

2.4 ROOF TO ROOF EXPANSION JOINT

- A. Stainless Steel expansion joint covers on new wood curbs, as detailed on drawings and outlined the NRCA and SMACNA manual.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install roof accessories in accordance with manufacturer's printed instructions and approved shop drawings. Installation of Portable Pipe Hangers shall not exceed six (6) feet on center.
- B. Coordinate with roofing operation for watertight integrity.
- C. Finished installation shall be water and air tight. Install sealant conforming to FS TT-S-00227E, Type II, Class A.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Exterior sealants and sealants for moving joints, except for joints in those systems listed under Related Work.
- B. Interior sealants and caulking.

1.2 RELATED WORK

- A. Section 04 20 00 - Unit Masonry: Masonry control and expansion joints.
- B. Division 7 - Roofing Sections: Sealants used in conjunction with roofing.
- C. Section 07 84 00 - Firestopping: Firestopping penetrations.
- D. Section 07 62 00 - Sheet Metal Flashing, Gutters, Downspouts and Trim: Sealants used in conjunction with sheet metal items.
- E. Section 08 80 00 - Glazing Systems: Glazing sealants.
- F. Section 09 21 16 - Gypsum Board assemblies: Acoustical sealants.
- G. Division 23 - Mechanical Sections.
- H. Section 32 13 13 - Concrete Paving: Site concrete paving expansion joint sealant.

1.3 REFERENCES

- A. ASTM International (ASTM)
 - 1. C717, Standard Terminology of Building seals and Sealants
 - 2. C793, Standard Test Method for Effects of Accelerated Weathering on Elastomeric Joint Sealants
 - 3. C794, Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
 - 4. C834, Standard Specification for Latex Sealants
 - 5. C920, Standard Specification for Elastomeric Joint Sealants
 - 6. C1193, Standard Guide for Use of Joint Sealants
- B. Sealant, Waterproofing and Restoration Institute (SWRI)
 - 1. The Professional's Guide

1.4 SUBMITTALS

- A. Product Data:
 - 1. Manufacturer's specifications and other data needed to prove compliance with specified requirements.
 - 2. Manufacturer's installation instructions.

- B. Sample: On site sample for Architect's approval of colors.
- C. Certification: Manufacturer's affidavit that materials used in Project contain no asbestos.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Experienced in building sealant installation whose work has resulted in sealant installations with a record of successful performance.
- B. Source Limitations: Unless specifically indicated, obtain each type of building sealant through one source from a single manufacturer.
- C. Pre-construction Field Adhesive Testing: Prior to installation of building sealants, field test their adhesion to joint substrates in accordance with manufacturer's instructions. Perform test in locations indicated by Architect. Perform test for each type of building sealant and each substrate as required by Architect. If required by Architect, arrange for tests to be performed with sealant manufacturer's representative present. Follow-up review by Architect and manufacturer may be required to observe sealant performance over time and may result in re-application of sealant or replacement.
- D. Cleaning: Facade sealants that have collected dirt at the time of Substantial Completion shall be cleaned over the entire facade prior to acceptance by the Owner. 11 months after final completion of the building, if the sealant joints show dirt, they shall again be cleaned over the entire façade.

1.6 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of sealants when joint substrates are wet or when ambient temperature conditions are above limits permitted by sealant manufacturers or are below 40 degree F.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by sealant manufacturer for applications indicated.
- C. Joint-Substrate Conditions: Do not proceed with installation of sealants until contaminates which may interfere with adhesion are removed from substrates.

1.7 PRE-INSTALLATION CONFERENCE

- A. Refer to Section 01 31 13 – Project Coordination.
- B. In addition, refer to information above concerning Field Adhesive Testing.

1.8 WARRANTY

- A. Warrant the work specified herein for two (2) years against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials and workmanship.
- B. Defects shall include, but not be limited to:
 - 1. Leaking
 - 2. Cracking, splitting or releasing from substrate
 - 3. Deterioration or color change

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

- A. Specifications are based on the products or materials of the named manufacturer, otherwise selection may be made from any manufacturer listed below whose products meet or exceed the specifications. Other manufacturers must have a minimum of five (5) years' experience manufacturing the products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
1. Typical Sealants:
 - a. BASF
 - b. Bostik
 - c. Pecora, Inc.
 - d. Sika
 - e. Tremco Incorporated
 2. Silicone Sealants at Appliances:
 - a. Pecora, Inc.
 - b. General Electric Co.
 - c. Dow Corning

2.2 MATERIALS

- A. Caulking for Exposed Non-Working Interior Locations:
1. Type: Acrylic Latex, conforming to ASTM C834; single component, paintable.
 2. Applications: Use for interior wall and ceiling joints, joints between door and window frames and wall surfaces, and other interior non-traffic-bearing joints for which no other type of sealant is indicated.
- B. Sealant for Working Joints and Exposed Vertical Exterior Locations:
1. Type: Polyurethane, conforming to ASTM C920, Type S or M, Grade NS, Class 35; single or multi-component, non-sagging.
 2. Applications: Use for:
 - a. Control, expansion, and soft joint masonry. Refer to drawings and Section 04 20 00, Unit Masonry for specific locations. Provide full sealant joints at building expansion joints.
 - b. Joints between concrete and other materials.
 - c. Joints between metal frames and other materials.
 - d. Other exterior non-traffic-bearing joints for which no other type of sealant is indicated.
- C. Rubber Sealant:
1. Type: Butyl sealant, conforming to ASTM C920, Type NT, Grade NS, Class 12-1/2; single component, solvent release, non-skinning, non-sagging.
 2. Movement Capability: Plus and minus 12-1/2 percent.
 3. Service Temperature range: -13 to 180 degree F.
- D. Sealant at Sanitary Locations:
1. Type: Single component, silicone sealant conforming to ASTM C920, Type S, Grade NS, Class 25, mildew resistant, non-yellowing.
 2. Application: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen and bathroom counter tops and wall surfaces, unless indicated otherwise. Use at all Kitchen appliances.
 3. Approved Product / Manufacturer: Sanitary SCS1700 Sealant manufactured by General Electric Company, Pecora Corp., Dow Corning, or Architect approved equal.

THE PROJECT, HIDDEN VALLEY ELEMENTARY SCHOOL RE-ROOFING PACKAGE

HIDDEN VALLEY ELEMENTARY SCHOOL
3435 BONITA VISTA DRIVE, SANTA ROSA, CALIFORNIA 95404

BASE PROPOSAL:

STEEP SLOPE: REMOVE AND PROPERLY DISPOSE OF EXISTING ROOFING / INSULATION DOWN TO EXISTING ROOF DECK AT ROOF AREAS A1-A6, A8, B1-B6, F1-F3, G1, G3, I1-I4 AND K1. REPAIR/PREP EXISTING ROOF DECK PER MANUFACTURE REQUIREMENTS. INSTALL NEW 2X WOOD BLOCKING AND SHIM NAILERS AROUND PERIMETER OF ROOF EDGE TO MATCH NEW ROOF INSULATION COMPOSITE BOARD. INSTALL FULL WIDTH ROOF OF UNDERLAYMENT MEMBRANE AT ALL PERIMETER EDGE, RIDGE, HIPS, VALLEYS, RAISE WALLS TO PICTURE FRAME ALL ROOF PLANES. INSTALL NEW 30# FELT AND ARCHITECTURAL DIMENSIONAL SHINGLES WITH ASSOCIATED ROOF RELATED SHEET METALS, GUTTERS, DOWNSPOUTS, AND TRIM.

REMOVE AND PROPERLY DISPOSE OF EXISTING ROOFING / INSULATION DOWN TO EXISTING ROOF DECK AT ROOF AREAS C1 AND J1. REPAIR / PREPARE EXISTING ROOF DECK AND LOOSE LAY NEW ROSIN PAPER (OVER WOOD ROOF DECK AREAS) AND 3" POLYISOCYANURATE INSULATION. INSTALL NEW 2X WOOD BLOCKING AND SHIM NAILERS AROUND PERIMETER OF ROOF EDGE TO MATCH NEW ROOF INSULATION AND RECOVERY BOARD ELEVATIONS. MECHANICALLY ATTACH NEW 1/4" RECOVERY BOARD SECURED TO EXISTING ROOF DECK, ENSURE ALL FASTENERS ARE PROPERLY SECURED TO THE EXISTING ROOF DECK WITHOUT PENETRATING THROUGH THE UNDERSIDE OF THE ROOF DECK. INSTALL NEW SPECIFIED MODIFIED BITUMEN BASE PLAY AND TITLE 24 MODIFIED BITUMEN FINISH PLY MEMBRANE WITH ASSOCIATED ROOF RELATED SHEET METALS, GUTTERS, DOWNSPOUTS, AND TRIM. INSTALL NEW SPECIFIED PIPE SUPPORTS FOR CONDUIT AND UTILITY PIPES WIT PROTECTION PADS.

CLEAN AND PREP EXISTING ROOF SYSTEM AT ROOF AREAS C2, AND C3. INSTALL NEW TITLE 24 RESTORATION COATING ON METAL ROOF PANEL SYSTEM.

EXTERIOR WATERPROOFING:

REMOVE / GRIND CLEAN ALL EXTERIOR BUILDING ENVELOPE SEALANT JOINTS ABOVE AND BELOW ALL ROOF AREAS WITH SCOPE OF WORK INDICATED AS PART OF THESE CONSTRUCTION DOCUMENTS, AROUND ALL EXISTING WINDOW AND DOOR FRAMES AND WALL PENETRATIONS. PRIME AND INSTALL NEW BACKER ROD AND SEALANT.

A. CONTRACTOR SHALL VISIT SITE TO ASCERTAIN EXACT EXISTING CONDITIONS AND COMPONENTS RELATED TO THE WORK DESCRIBED BY THESE DOCUMENTS. AFTER AWARD OF THE CONTRACT, CHANGE ORDER REQUEST FOR ADDITIONAL MONEY SHALL NOT BE APPROVED IF THE WORK COULD HAVE BEEN ANTICIPATED DURING THE SITE VISIT BY THE CONTRACTOR, ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ACCEPTED MANUFACTURER'S PRINTED INSTRUCTIONS & WARRANTY REQUIREMENTS.

B. DIMENSIONS, DETAILS, EQUIPMENT SIZE AND LOCATION SHOWN IN THESE DOCUMENTS ARE FOR INFORMATION AND REFERENCE ONLY. EXACT SIZE, LOCATION, TYPE OF MATERIAL AND TYPE OF CONSTRUCTION OF EXISTING CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN & CONFIRM.

C. ALL NEW CRICKETS AND TAPERED INSULATION SHALL BE INSTALLED WITH A FINISHED 1/4" PER FOOT MIN. SLOPE. CRICKET THE UP SLOPE SIDE OF ALL SQUARE CURBS AND PROJECTIONS.

D. REMOVE ALL ABANDONED EQUIP. IDENTIFIED ON ROOF TOP AND AS SHOWN ON DRAWINGS -(PATCH DECK) HOLES LESS THAN 10" WIDE- SCREW 22 GA. STAINLESS STEEL SHEET METAL TO EXISTING DECK HOLES GREATER THAN 10" WIDE- SCREW NEW METAL DECK (MATCH EXISTING) SPAN FROM JOIST TO JOIST.

E. ALL HVAC AND/OR DX UNITS, ELECTRICAL TRANSFORMERS, ROOF TOP EQUIPMENT, ETC. THAT ARE ON SLEEPERS SHALL BE DISCONNECTED/REMOVED, RAISED, & PLACED ON NEW CURBED PLATFORMS (RE: DETAIL), AND RECONNECTED/RE-INSTALLED. VERIFY ALL EXISTING CURB MOUNTED UNITS, EQUIPMENT, ETC. HAVE A MINIMUM 10" CURB HEIGHT (RAISED AS REQUIRED) - ALL DISCONNECTS AND RECONNECTS SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.

F. IF EXISTING ELECTRICAL/GAS/WATER/ETC. LINES ARE MODIFIED- ONLY LICENSED SUBCONTRACTORS SPECIALIZING IN HVAC, PLUMBING AND ELECTRICAL SHALL PERFORM THAT TYPE OF WORK. PERMITS AND INSPECTIONS REQUIRED- PROVIDE "MERCURY" GAS LINE TEST (COORDINATE OWNER/ARCHITECT WITNESS OF TEST), REPAIR ALL LEAKS AND RE-TEST

G. REPLACE AND RAISE (AS REQUIRED) ALL EXISTING EXPANSION JOINTS/AREA DIVIDERS/ CURB MOUNTED EQUIPMENT/ SKYLIGHTS A MIN. 10" ABOVE ROOF DECK. (UNLESS INDICATED OTHER WISE ON DRAWING.)

H. ENSURE ALL SOIL STACK FLASHING IS MIN. 10" ABOVE ROOF. COUPLE PVC PIPE ABOVE DECK, COUPLE CAST IRON PIPE UNDER DECK.

I. PROVIDE SHEET METAL HOODED (w/METAL FACE CLOSURE), WOOD CURB, BOX COVER AT ALL GAS LINE AND WATER LINE ROOF PENETRATIONS (RE: DETAILS). ENSURE LINES SLOPE AWAY FROM FACE COVER.

J. PROVIDE WALKWAY PROTECTION PADS (AS ACCEPTABLE TO MANUFACTURER-RE: SPECS.) AROUND ALL ROOF HATCHES, A/C UNITS, DOORS THAT OPEN ONTO ROOF, AND AT ALL ROOF TOP ACCESS LADDERS (TOP & BOTTOM)

K. ISOLATE ALL HEAT PIPES/FLUES AS RECOMMENDED & OUTLINED IN THE NRCA MANUAL FOR ISOLATED STACK FLASHING- (RE:DETAILS)

L. ALL OUTSIDE AIR INTAKES SHALL BE COVERED TO ELIMINATE ODORS AND FUMES FROM ENTERING INTO THE BUILDING DURING WORK.

M. EXAMINE AND CLEAN EXISTING DRAIN LINES OF DEBRIS AND BLOCKAGE, FLUSH WITH WATER TO ENSURE THAT DRAINS FLOW FREELY.

N. OWNER WILL VERIFY CORRECT OPERATION OF ALL ROOF TOP EQUIPMENT BEFORE AND AFTER PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING ALL INOPERABLE EQUIPMENT PRIOR TO RELEASE OF RETAINAGE.

O. REPLACE ALL RUSTED/DETERIORATED EXISTING METAL VENT FLASHING AND FLUES.

P. COORDINATE WALK OF ENTIRE ROOF (PRIOR TO STARTING) WITH ROOFING MANUFACTURER'S TECHNICAL REP. TO IDENTIFY AND LOCATE ALL AREAS OF HIGH SLOPE WHICH MIGHT REQUIRE SPECIAL PROCEDURES FOR SYSTEM ATTACHMENT.

Q. PROVIDE ONE-WAY MOISTURE VENTS 1 PER 900 SF AT ALL LT. WT. OVER POUR AREAS

3 HIDDEN VALLEY ES SCOPE OF WORK

1. REMOVE EXISTING WOOD SIDING, REPAIR/PATCH PLYWOOD SUBSTRATE, SEAL TERMINATION OF EXISTING SP FLASHING. INSTALL NEW EXPOSED FASTENED WALL PANEL WITH ICE AND WATER SHIELD.
2. INSTALL NEW DIAMOND SADDLES BETWEEN EXISTING ROOF DRAINS. INSTALL NEW MODIFIED BITUMEN BASE PLY AND PITCH FINISH PLY PER MANUFACTURES REQUIREMENTS.
3. REMOVE EXISTING WOOD SIDING, REPAIR/PATCH EXISTING SUBSTRATE TO INSTALL NEW ICE AND WATER SHIELD. INSTALL HATCH CHANNELS AND CONCEALED FASTEN WALL PANELS.
4. NEW CONCEALED WALL PANEL SAME HEIGHT AS PANELS BEING INSTALLED OVER CANOPY WITH 'J' CLOSURE AND WEEPS.

2 KEYED NOTES



GENERAL NOTES



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HIDDEN VALLEY ELEMENTARY SCHOOL RE-ROOFING PROJECT

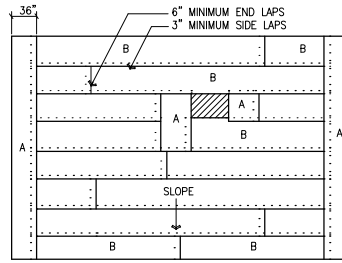
Project No. : 1725R

Date: 02/13/2017

Drawing No.

GO

DIRECTION OF SLOPE DICTATES WHETHER PICTURE FRAME LAPS ARE UNDERNEATH OR ON TOP OF FIELD MEMBRANE SO AS NOT TO BUCK WATER.



PICTURE FRAME BOTH MOD. BIT. BASE PLY & FINISH PLY

A = PICTURE FRAME SHEETS
B = NATURAL PICTURE FRAME SHEETS
= CURB MOUNTED EQUIPMENT

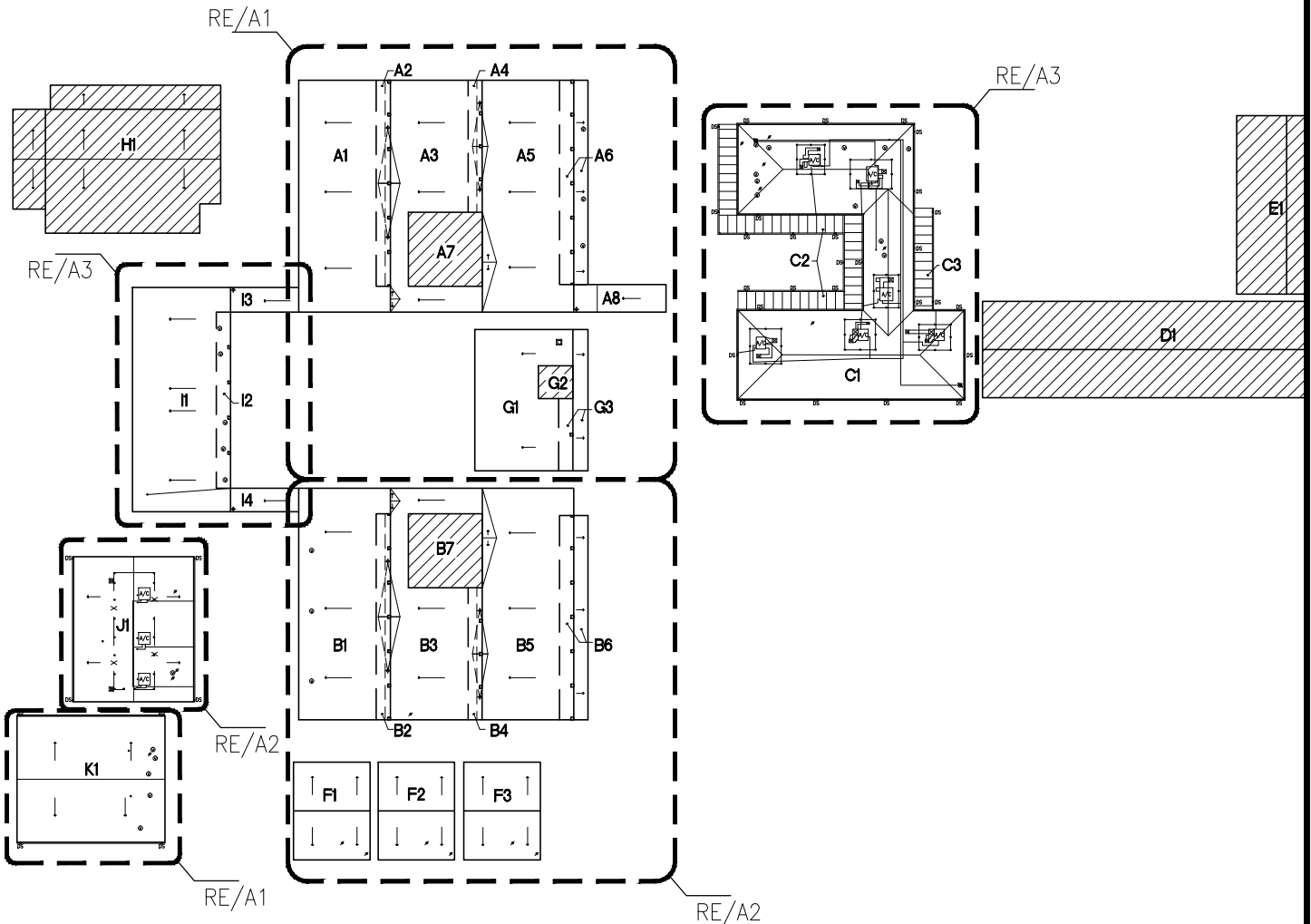
FOLLOW MANUFACTURER'S GUIDELINES FOR MAX. ROLL LENGTHS.

2 PICTURE FRAME DETAIL

PLUMBING VENT	GOOSE NECK VENT	PIPE BOX
FLANGE VENT	CURB MOUNTED A/C	EXHAUST AND SUPPLY FAN ON ONE SINGLE CURB
PITCH PAN	COLUMN BELOW	RIDGE LINE
NEW ROOF DRAIN	SPLASH PAN	EXISTING AREAS TO REMAIN - NIC
EXIST. ROOF DRAIN	A/C ON POSTS	NEW TAPERED INSULATION / CRICKE
OVERFLOW DRAIN	ROOF HATCH	NEW LIGHTWEIGHT INSULATION / CRICKE
WALL DRAIN	SKYLIGHT	ROOF AREA DESIGNATION
CURB MOUNTED VENT	ANTENNA	TAPERED LIGHTWEIGHT CONCRETE
CURB MOUNTED VENT ABANDONED CURB TO BE REMOVED/PATCHED	SATELLITE DISH	DESIGNATES EXTENTS OF WORK IDENTIFIED BY KEYED NOTES
GUY WIRE	SCUPPER	AD - AREA DIVIDER
POWER VENT	DOWNSPOUT	EXPANSION JOINT
HEATER VENT	WALL LADDER	C - CONDENSATE LINE
BOILER VENT	SWING LADDER	W - WATER LINE
TURBINE VENT	GAS LINE	
ABANDON EQUIP.	ELEC. LINE	

1 GENERAL LEGEND

GENERAL INFO.
BASE SYSTEM



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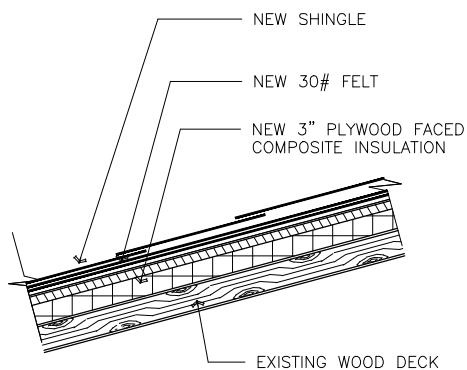
HIDDEN VALLEY ELEMENTARY SCHOOL RE-ROOFING PROJECT

Project No. : 1725R
Date: 02/13/2017

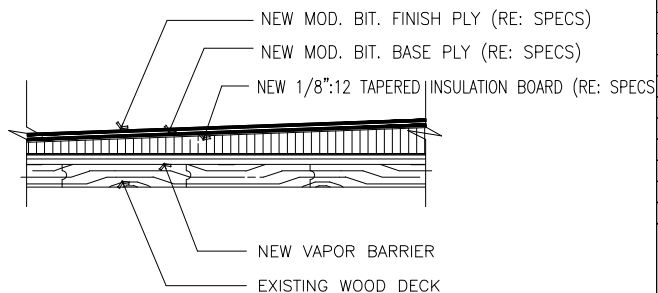
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G1

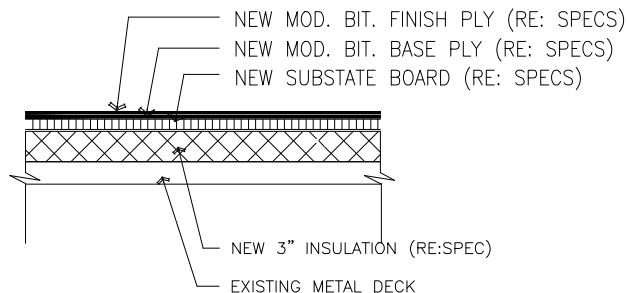
A



B



C



D



AREA	APPROX. SQ. FT.	EXISTING NOMENCLATURE	PROPOSED NOMENCLATURE	REMARKS
A1 BUILDING A	3,285	WOOD DECK / BS / SHINGLES	A	
A2 BUILDING A	523	WOOD DECK / BS / SHINGLES	A	
A3 BUILDING A	2,500	WOOD DECK / BS / SHINGLES	A	
A4 BUILDING A	333	WOOD DECK / BS / SHINGLES	A	
A5 BUILDING A	3,283	WOOD DECK / BS / SHINGLES	A	
A6 BUILDING A	1,038	WOOD DECK / BS / SHINGLES	A	
A7 BUILDING A	NIC	NIC		
A8 BUILDING A	453	WOOD DECK / BS / SHINGLES	A	
B1 BUILDING B	3,285	WOOD DECK / BS / SHINGLES	A	
B2 BUILDING B	523	WOOD DECK / BS / SHINGLES	A	
B3 BUILDING B	2,500	WOOD DECK / BS / SHINGLES	A	
B4 BUILDING B	333	WOOD DECK / BS / SHINGLES	A	
B5 BUILDING B	3,283	WOOD DECK / BS / SHINGLES	A	
B6 BUILDING B	1,038	WOOD DECK / BS / SHINGLES	A	
B7 BUILDING B	NIC	NIC		
C1 BUILDING C	7,425	WOOD DECK / BP / BUR-G	B	
C2 BUILDING C	1,415	METAL PANEL	D	1
C3 BUILDING C	347	METAL PANEL	D	1
D1 BUILDING D	NIC	NIC		
E1 BUILDING E	NIC	NIC		
F1 BUILDING F	1,338	WOOD DECK / BS / SHINGLES	A	
F2 BUILDING F	1,338	WOOD DECK / BS / SHINGLES	A	
F3 BUILDING F	1,338	WOOD DECK / BS / SHINGLES	A	
G1 BUILDING G	2,095	WOOD DECK / BS / SHINGLES	A	
G2 BUILDING G	NIC	NIC		
G3 BUILDING G	562	WOOD DECK / BS / SHINGLES	A	
H1 BUILDING H	NIC	NIC		
I1 BUILDING I	3,494	WOOD DECK / BS / SHINGLES	A	
I2 BUILDING I	447	WOOD DECK / BS / SHINGLES	A	
I3 BUILDING I	300	WOOD DECK / BS / SHINGLES	A	
I4 BUILDING I	290	WOOD DECK / BS / SHINGLES	A	
J1 BUILDING J	3,122	MTLD / INS / TPF	C	
K1 BUILDING K	3,347	WOOD DECK / BS / SHINGLES	A	
TOTAL	49,649			

CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AND FOR ENSURING NEW CONDITIONS ADHERE TO ALL LOCAL AND FEDERAL CODES ALONG WITH INDUSTRY STANDARD GUIDELINES AND REMAIN IN A WATERTIGHT CONDITION

ABBREVIATIONS:

LWIC: LIGHTWEIGHT CONCRETE DECK	MAS: MECH ATTACHED SINGLE PLY
BS: VENTING BASE SHEET	BUR-A: BUILT UP ROOF W/ GRAVEL
FG: YELLOW FIBERGLASS (THICKNESS)	BUR-G: BUILT UP ROOF W/ GRAVEL
WF: WOOD FIBER RECOVERY (THICKNESS)	ISO: POLYISOCYANURATE (THICKNESS)
BP: BASE PLY	FAS: FULLY ADHERED SINGLE PLY
MTLD: METAL DECK	TPF: THERMOPLASTIC FINISH PLY
BP: BASE PLY	FAS: FULLY ADHERED SINGLE PLY

REMARKS

1. SAND BLAST EXISTING METAL CANOPY AND COAT.

2 NEW NOMENCLATURE



EXISTING ROOF AREAS

PRK

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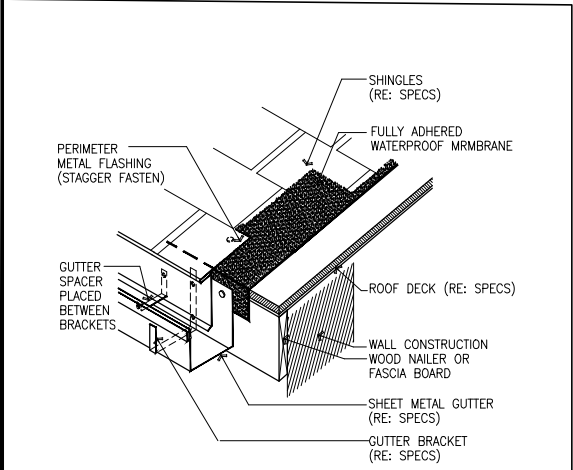
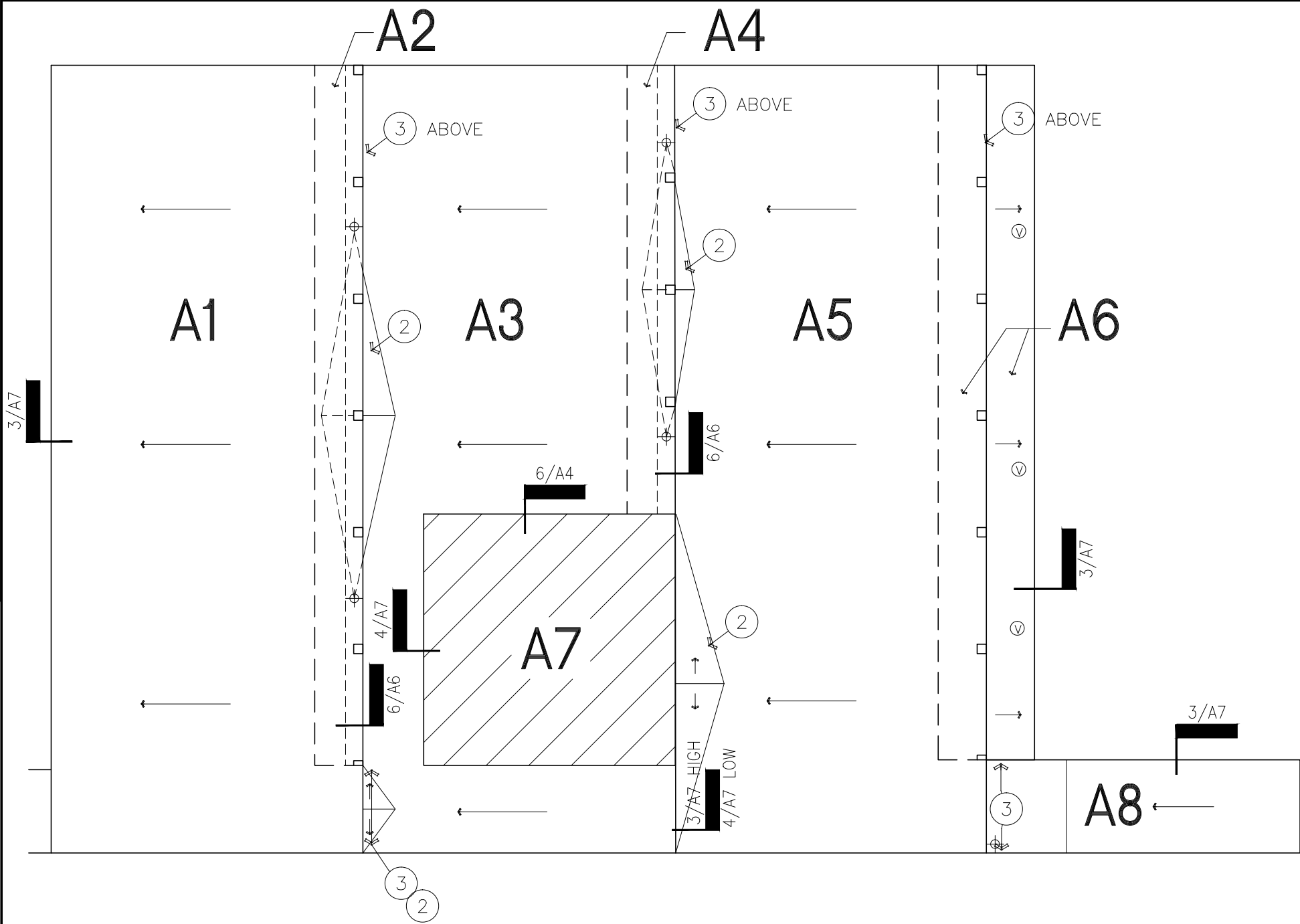
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HIDDEN VALLEY ELEMENTARY SCHOOL RE-ROOFING PROJECT

Project No. : 1725R
Date: 02/13/2017

Drawing No.

G2

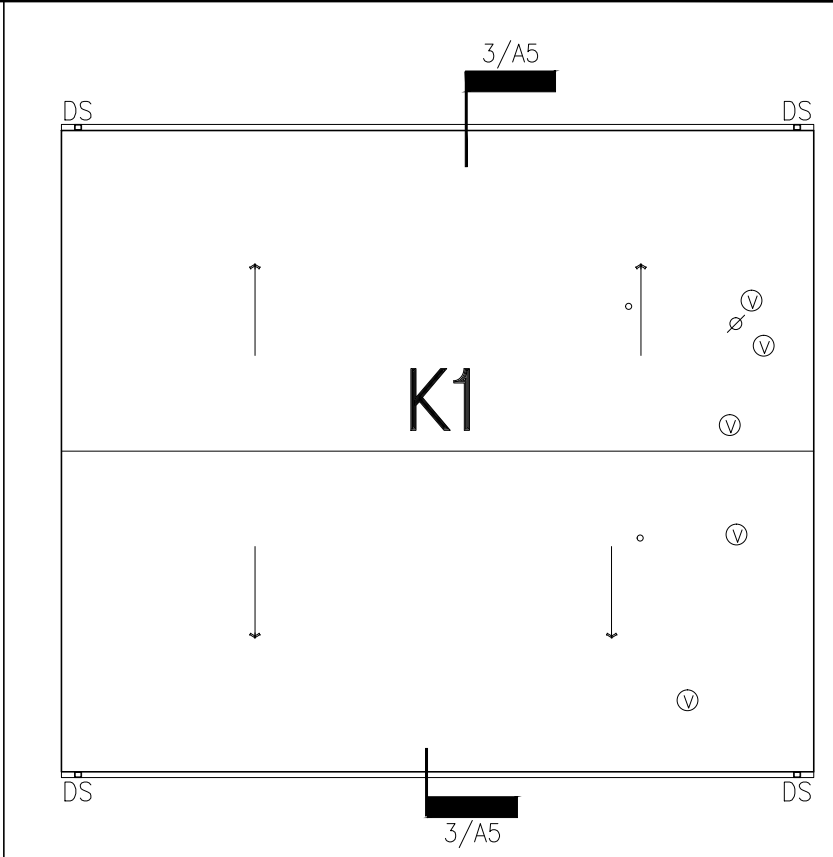


3 GUTTER DETAIL

GUTTER.dwg
NTS

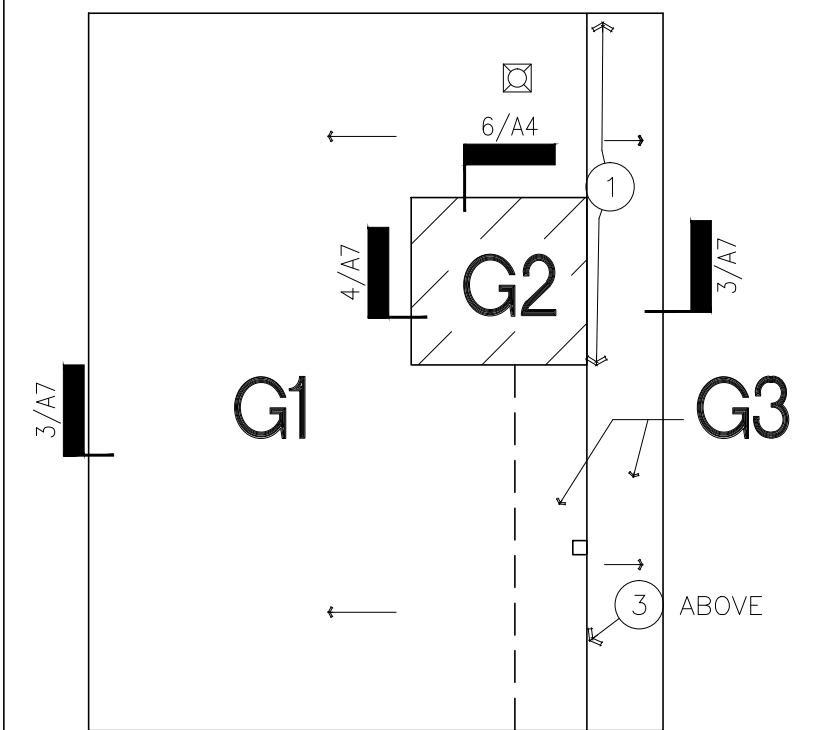
2 HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'A'

1/16" = 1'-0"



3 HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'K'

1/16" = 1'-0"



1 HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'G'

1/16" = 1'-0"

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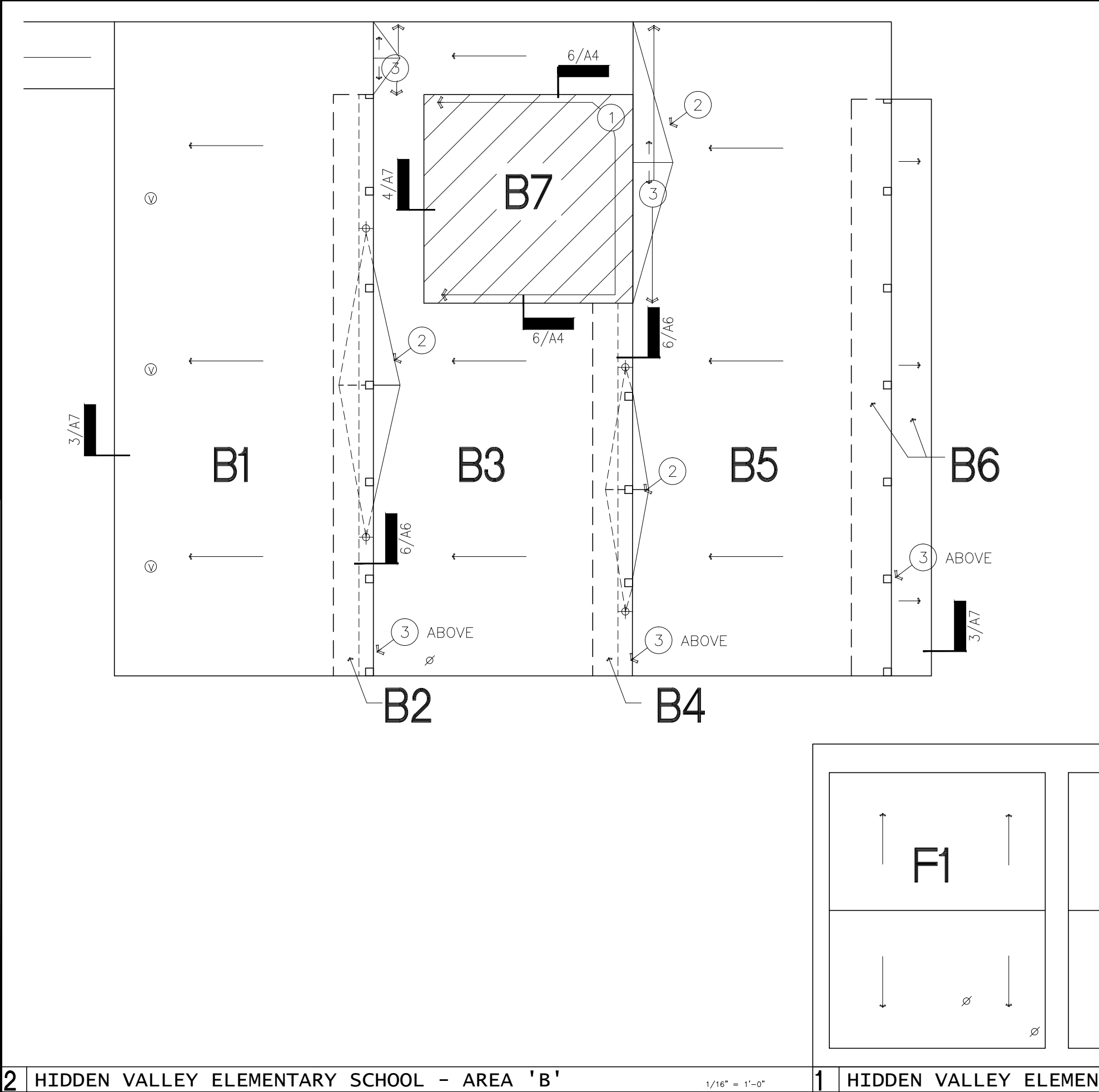
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CITY SCHOOLS**
Excellence is our Common Ground

**HIDDEN VALLEY ELEMENTARY SCHOOL
RE-ROOFING PROJECT**

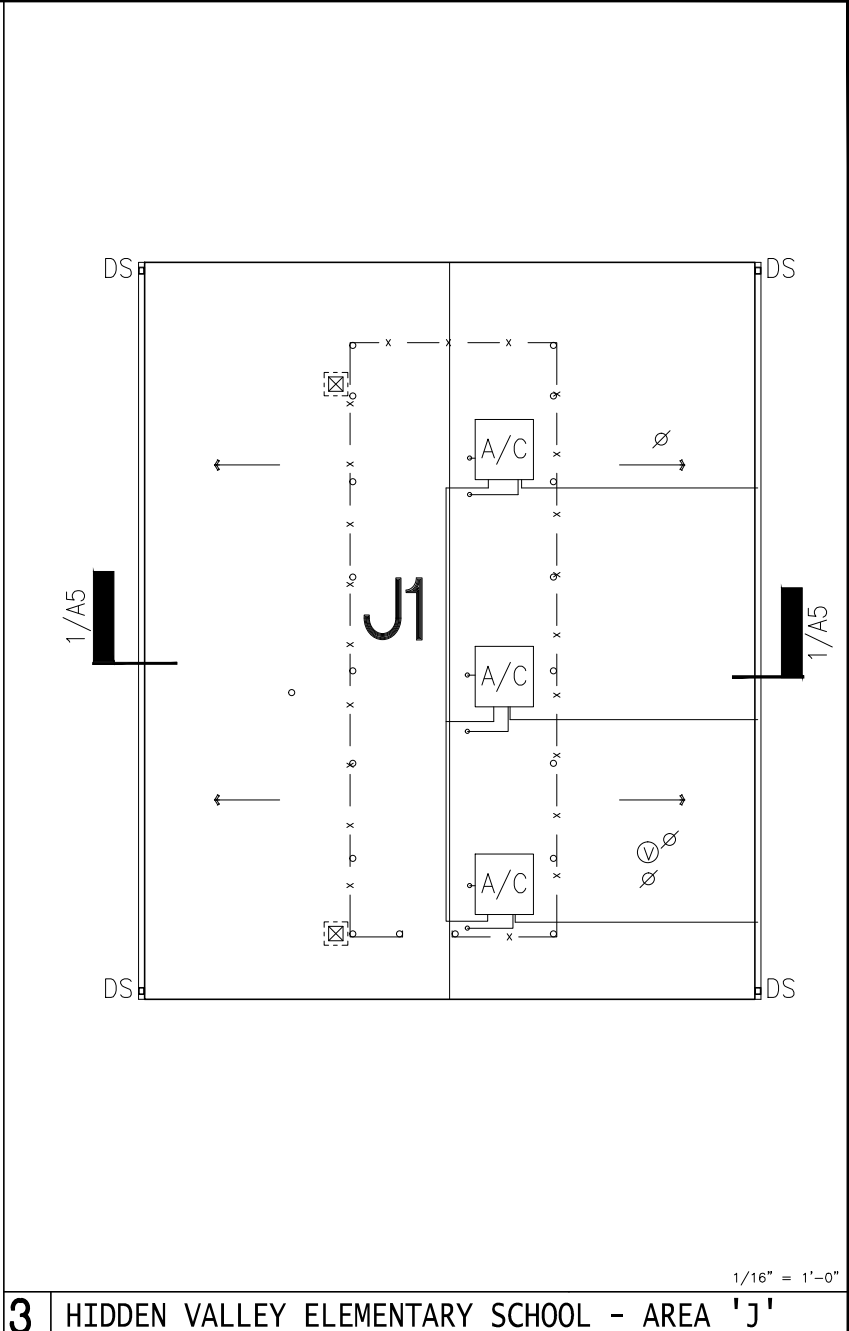
SANTA ROSA CITY SCHOOLS

DATE: 02/13/2017
DRAWN BY: JEB
REVISED: SWL

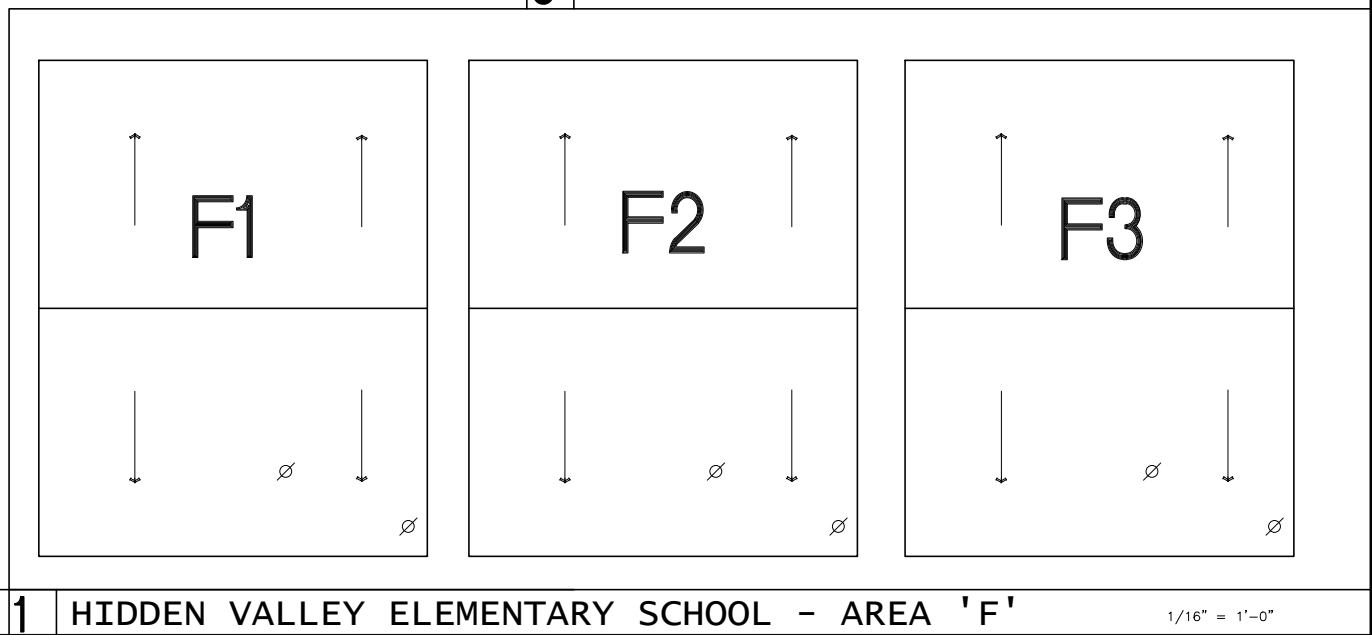
A1



2 | HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'B' 1/16" = 1'-0"



3 | HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'J' 1/16" = 1'-0"



1 | HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'F' 1/16" = 1'-0"

PBK
Facility Consulting
Division
2860 GATEWAY OAKS
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SACRAMENTO, CA 95833
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SANTA ROSA CITY SCHOOLS
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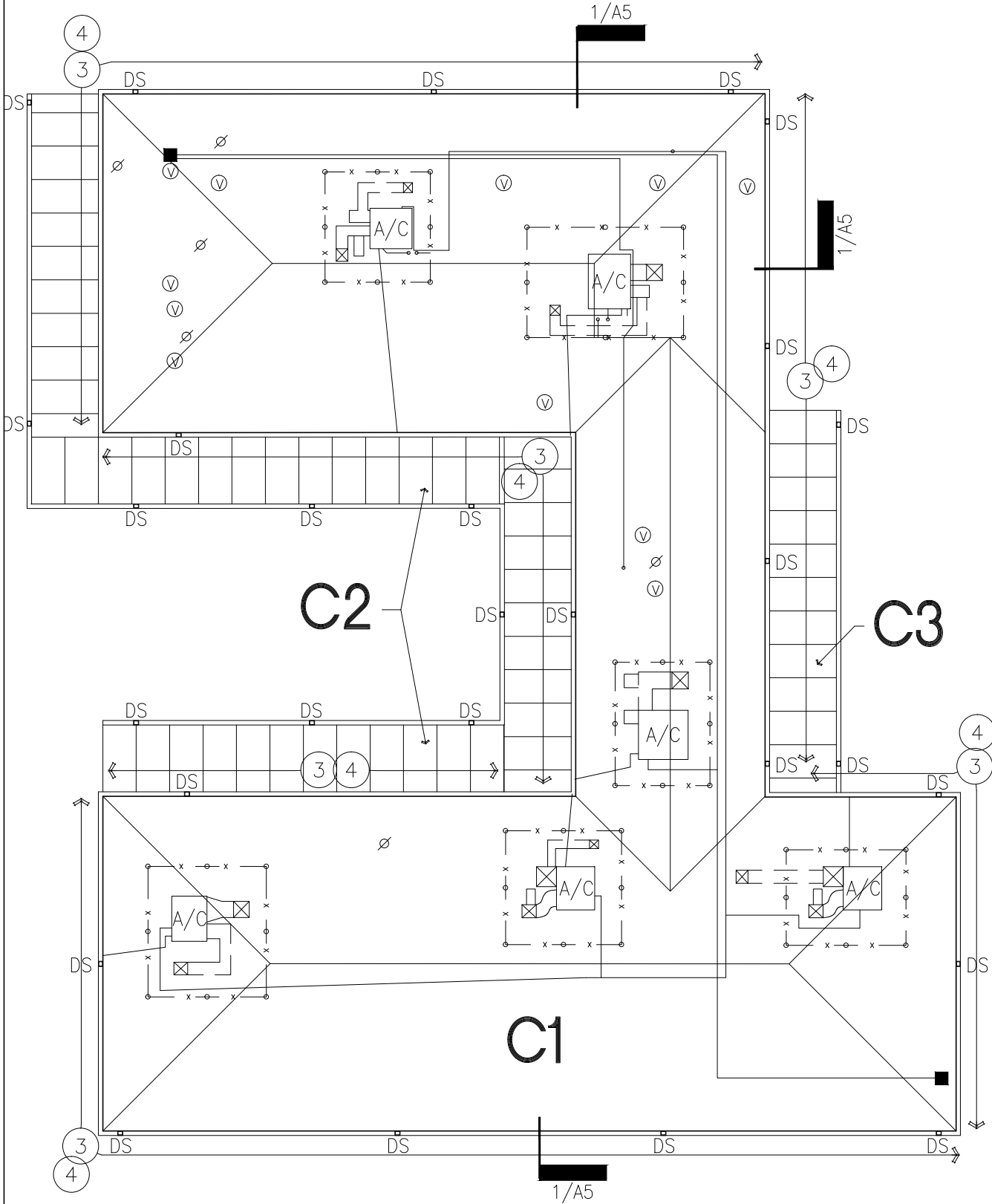
A2

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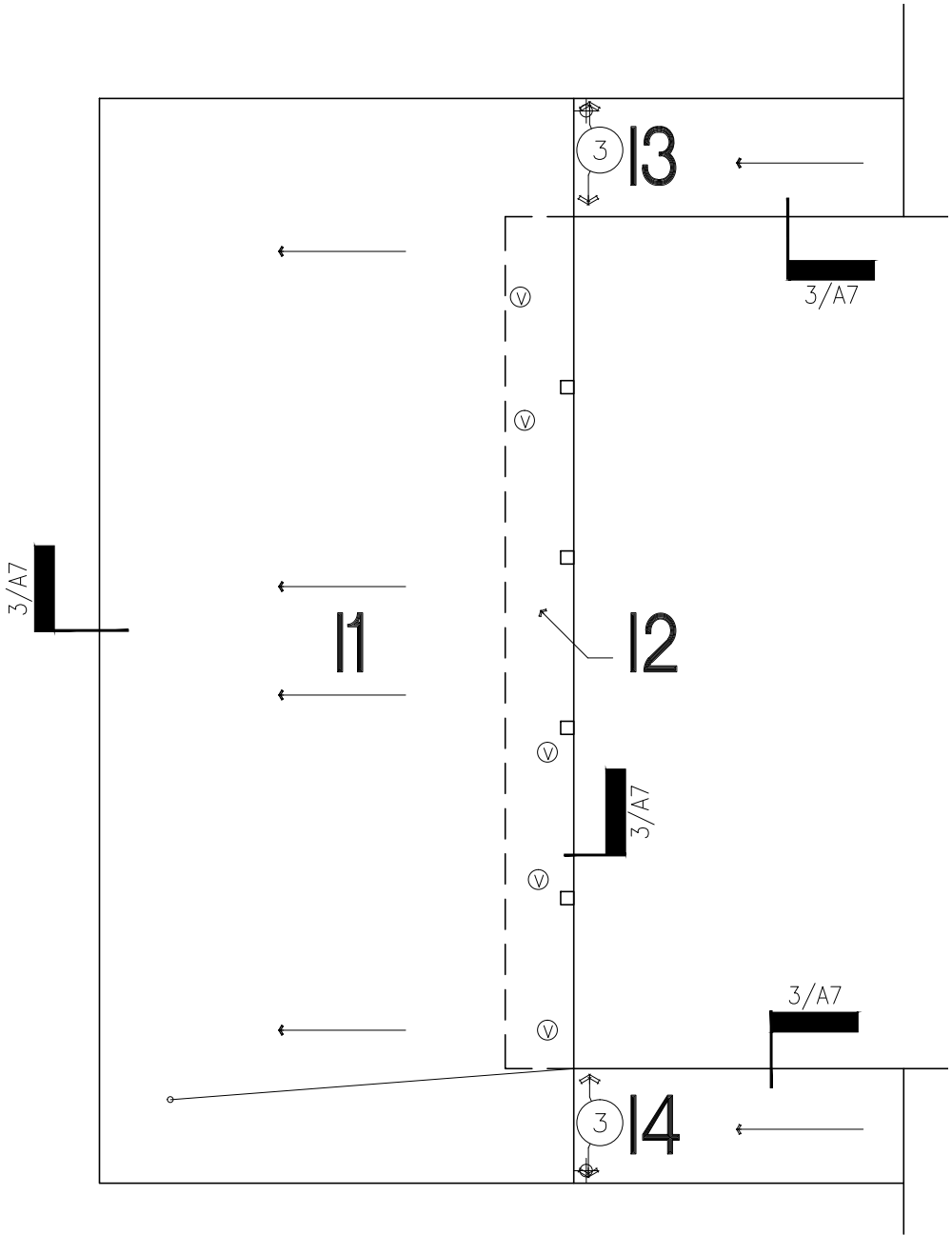
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1 HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'C'

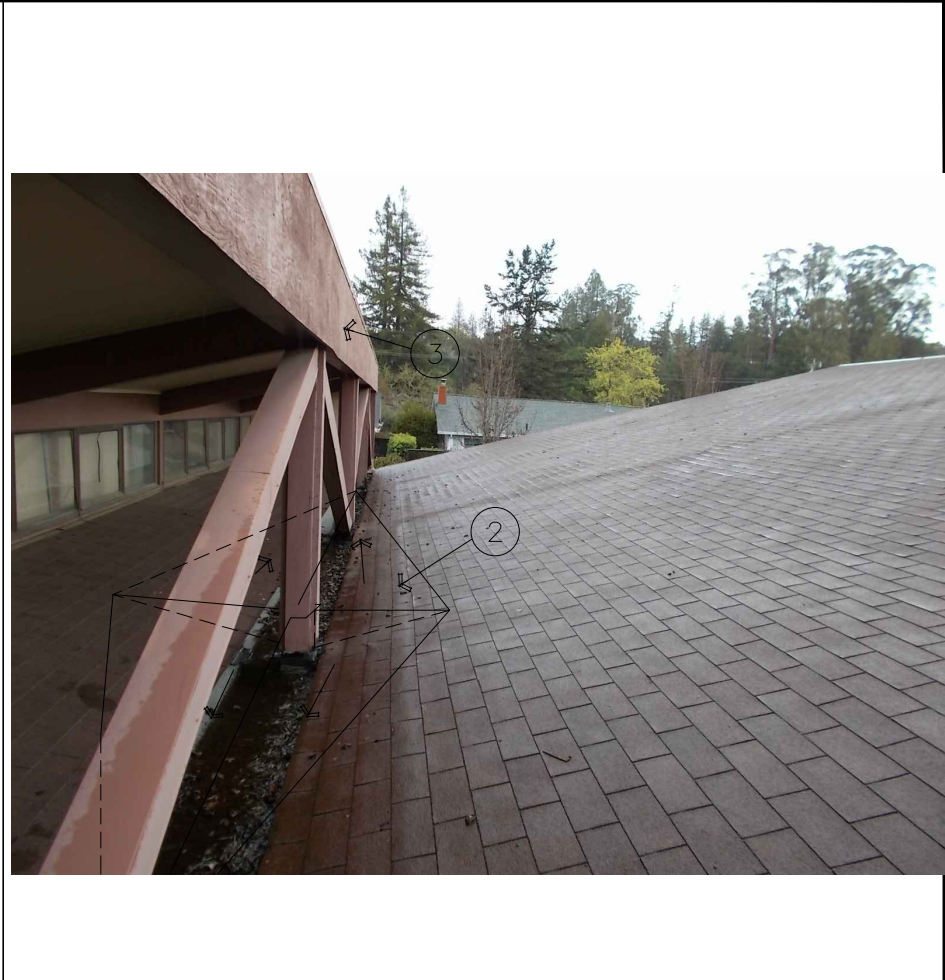
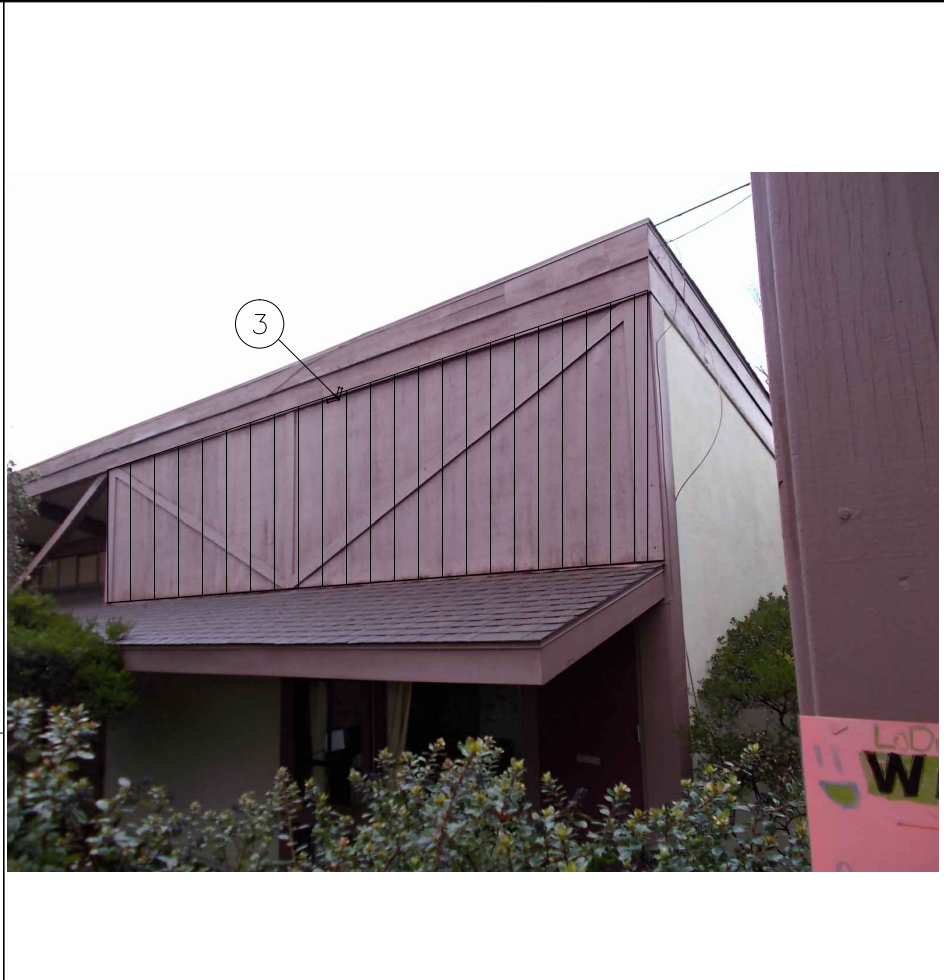
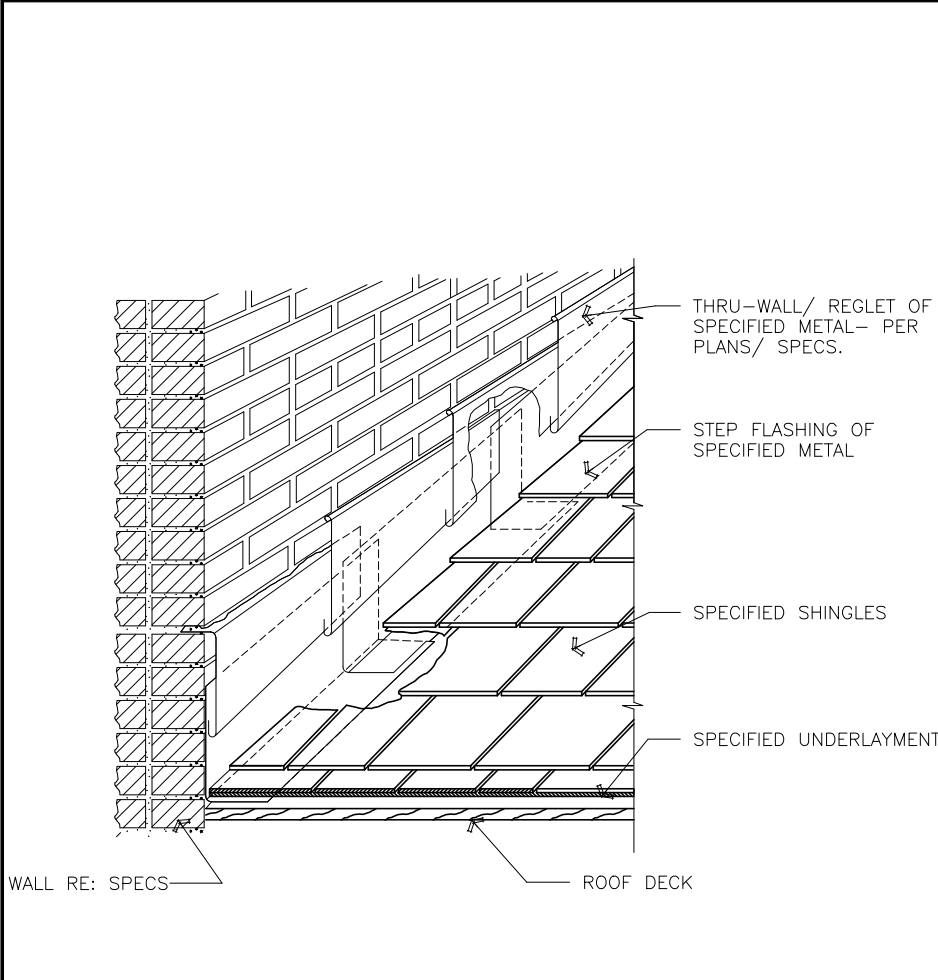
1/16" = 1'-0"

1/16" = 1'-0"



2 HIDDEN VALLEY ELEMENTARY SCHOOL - AREA 'I'

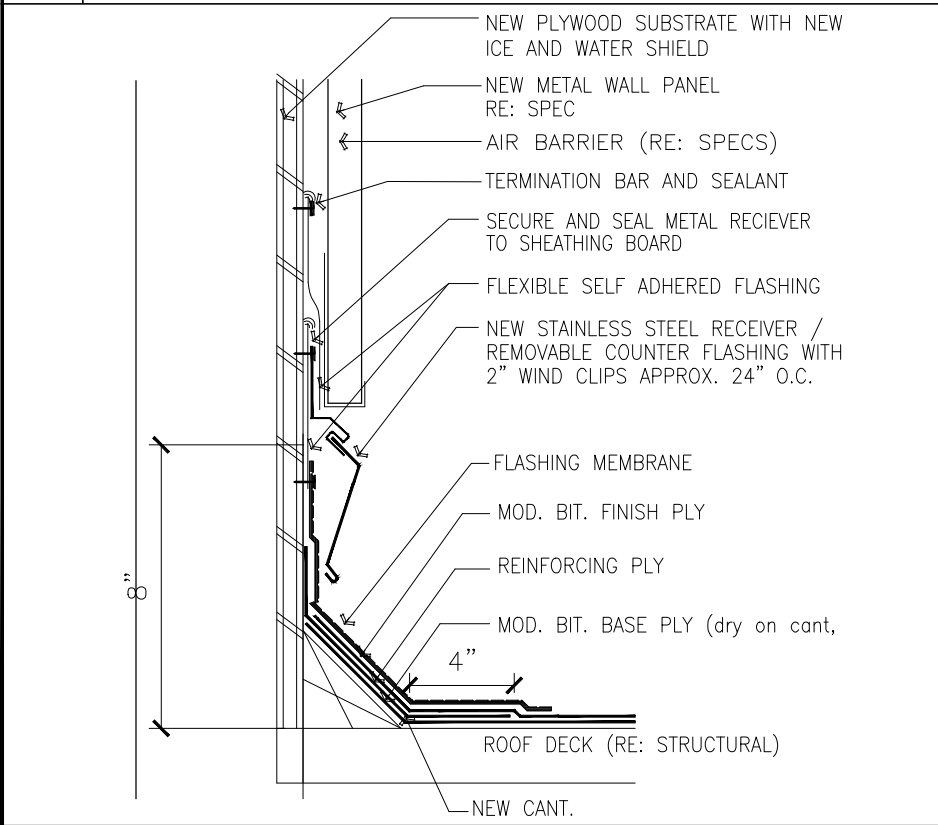
1/16" = 1'-0"



6 STEP FLASHING NTS

5

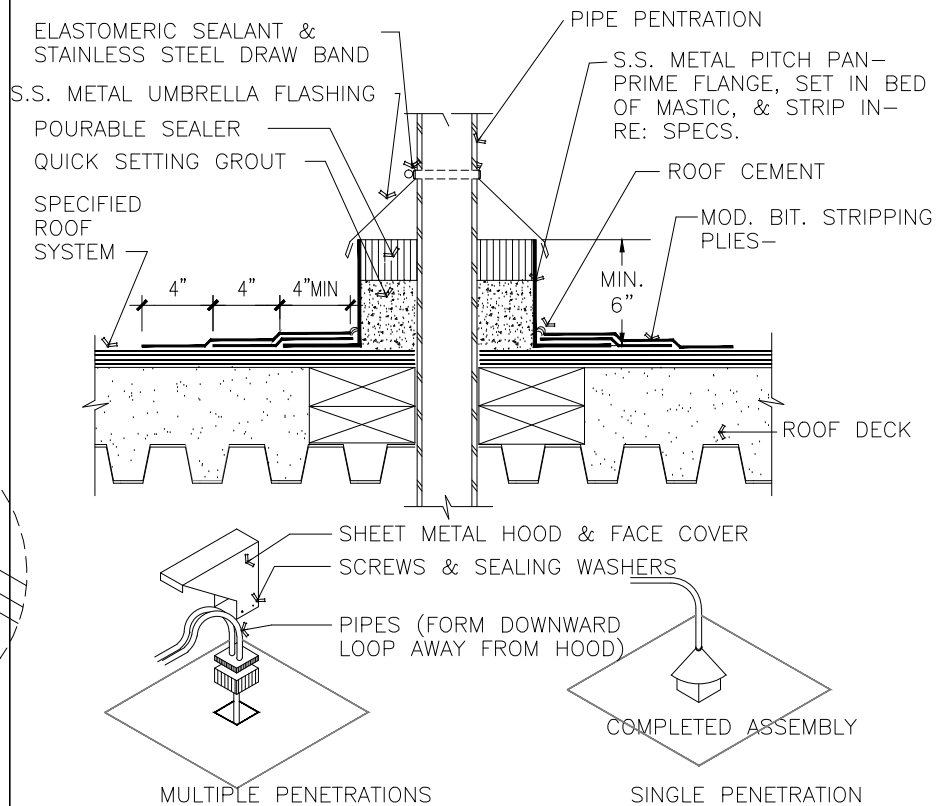
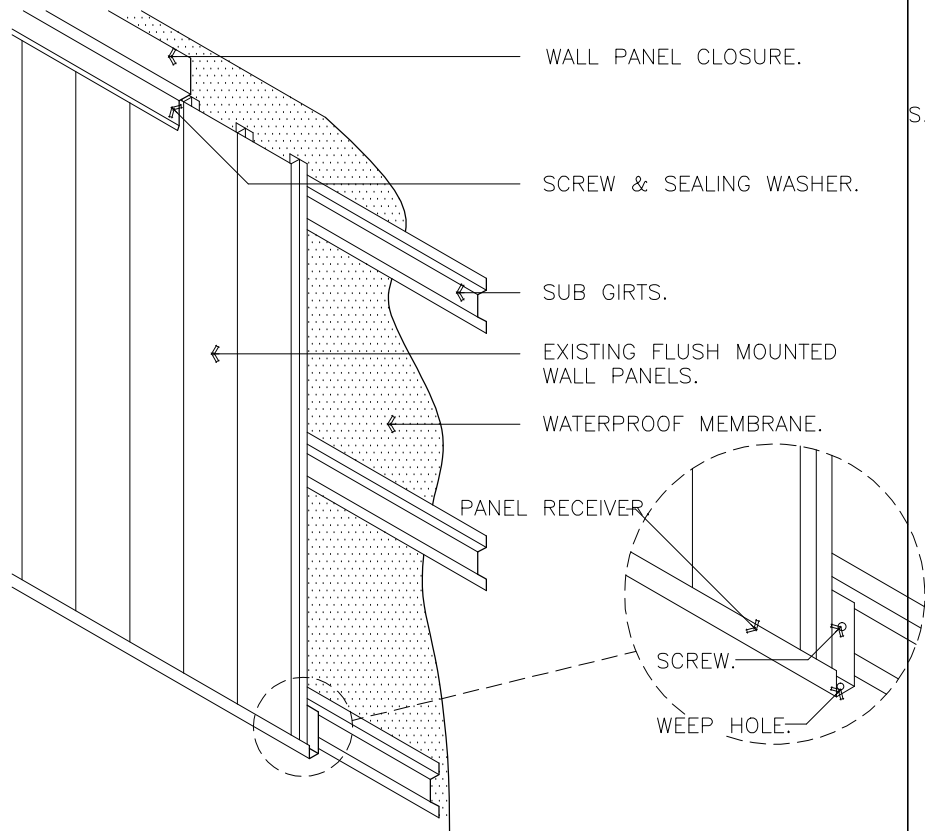
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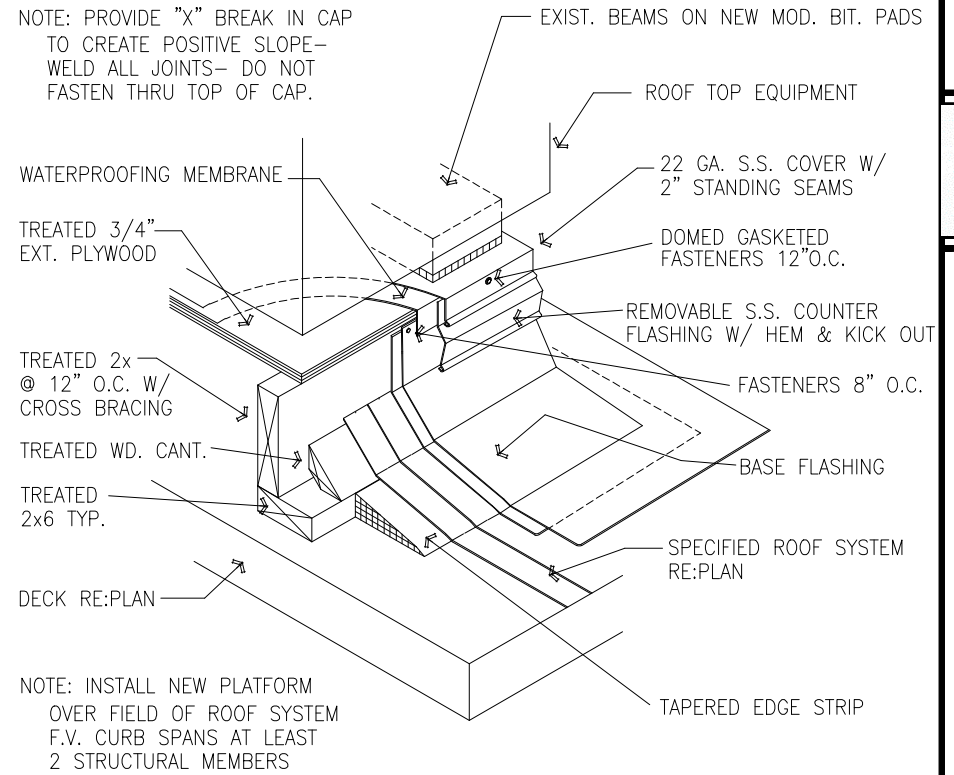
3 BASE W/ WALL PANELS NTS

2

1

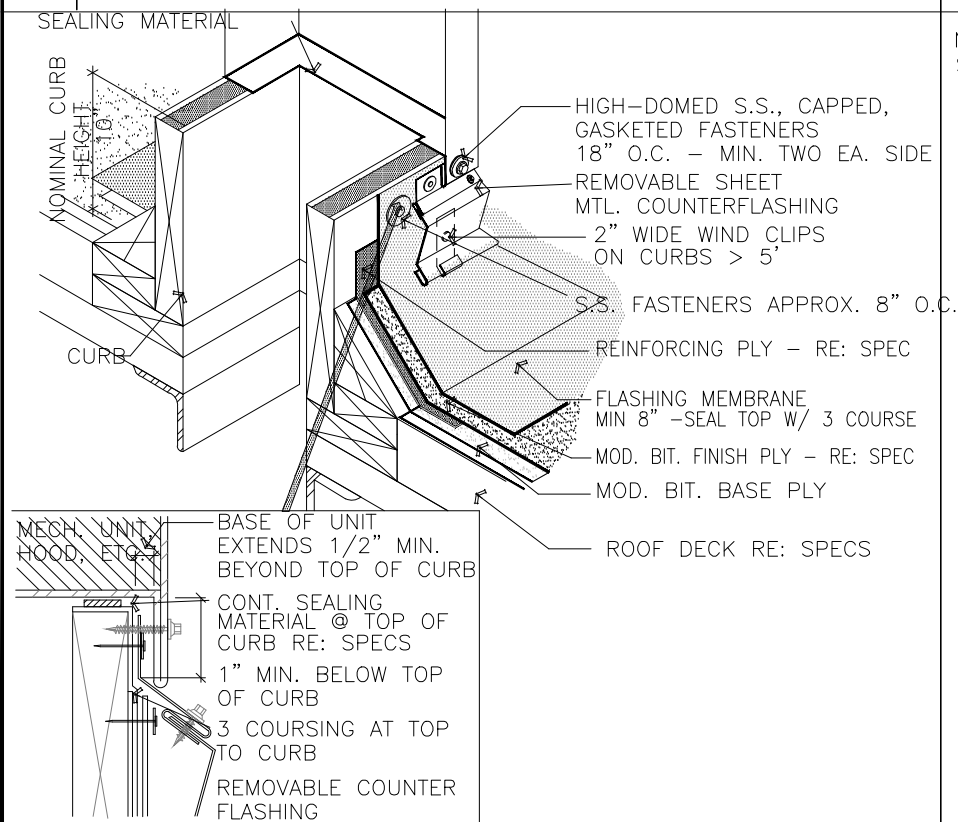


NOTE: PROVIDE "X" BREAK IN CAP TO CREATE POSITIVE SLOPE—WELD ALL JOINTS—DO NOT FASTEN THRU TOP OF CAP.



6 WALL PANELS

NTS



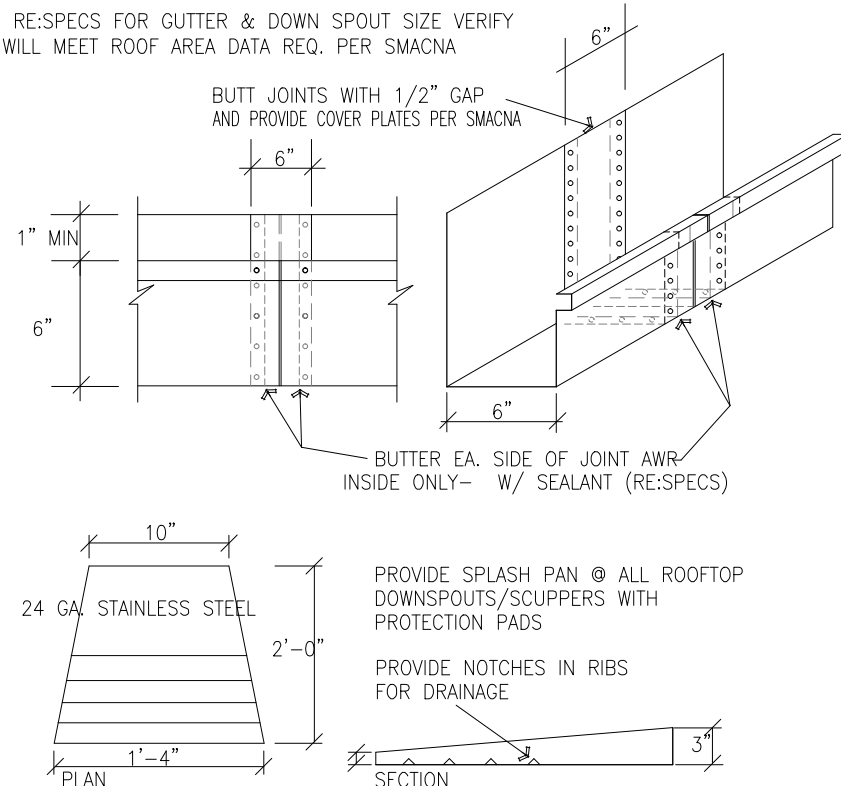
3 EQUIPMENT CURB

07M—CF01.dwg
NTS

5 PITCH PAN

07M—FP01.dwg
NTS

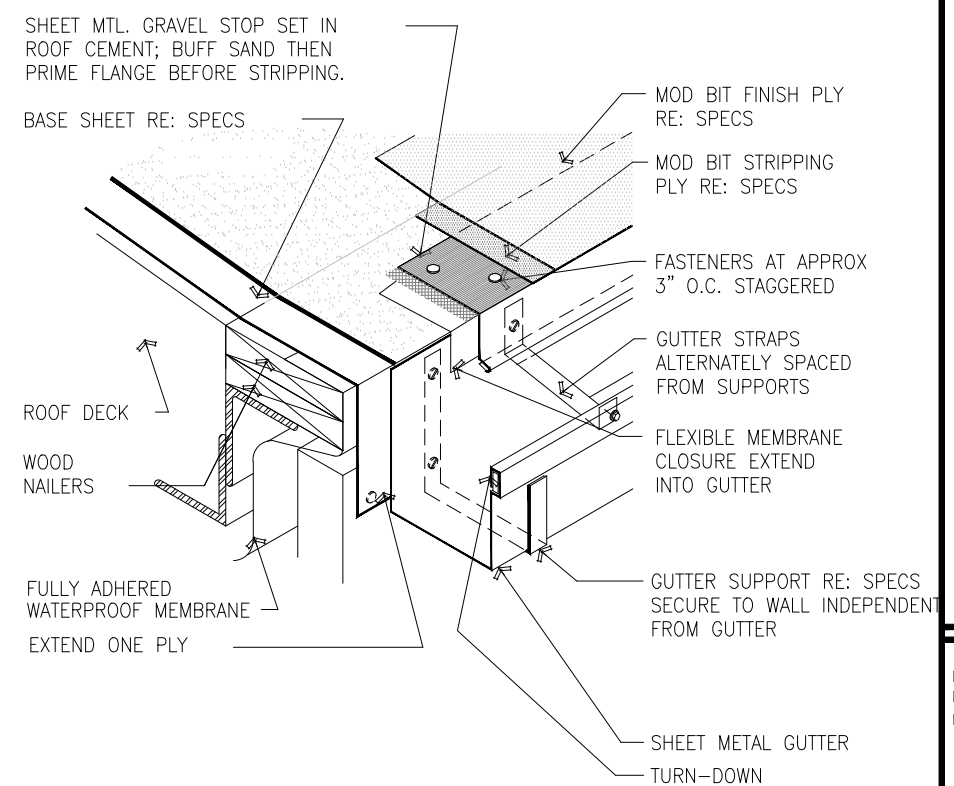
NOTE: RE:SPECS FOR GUTTER & DOWN SPOUT SIZE VERIFY SIZE WILL MEET ROOF AREA DATA REQ. PER SMACNA



2 GUTTER JOINT

07MC—GJ01.dwg
N.T.S.

4 CURBED PLATFORM -



1 ROOF EDGE W/ GUTTER

07M—PE02.dwg
NTS

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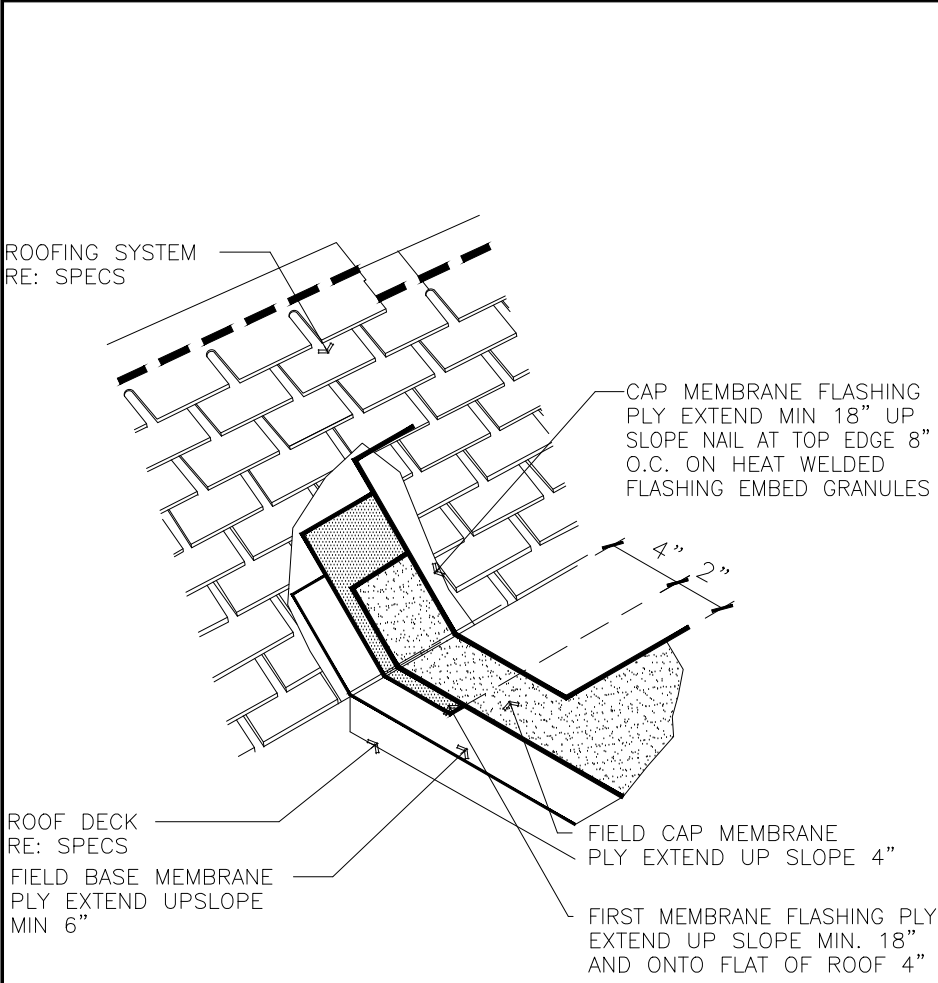
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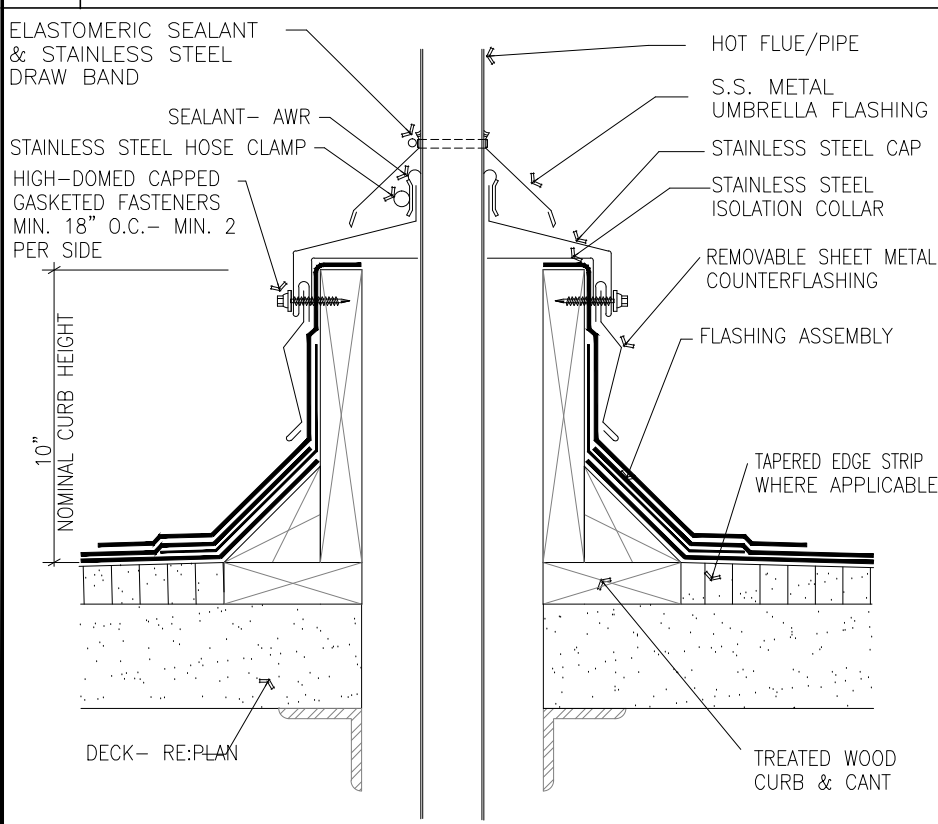
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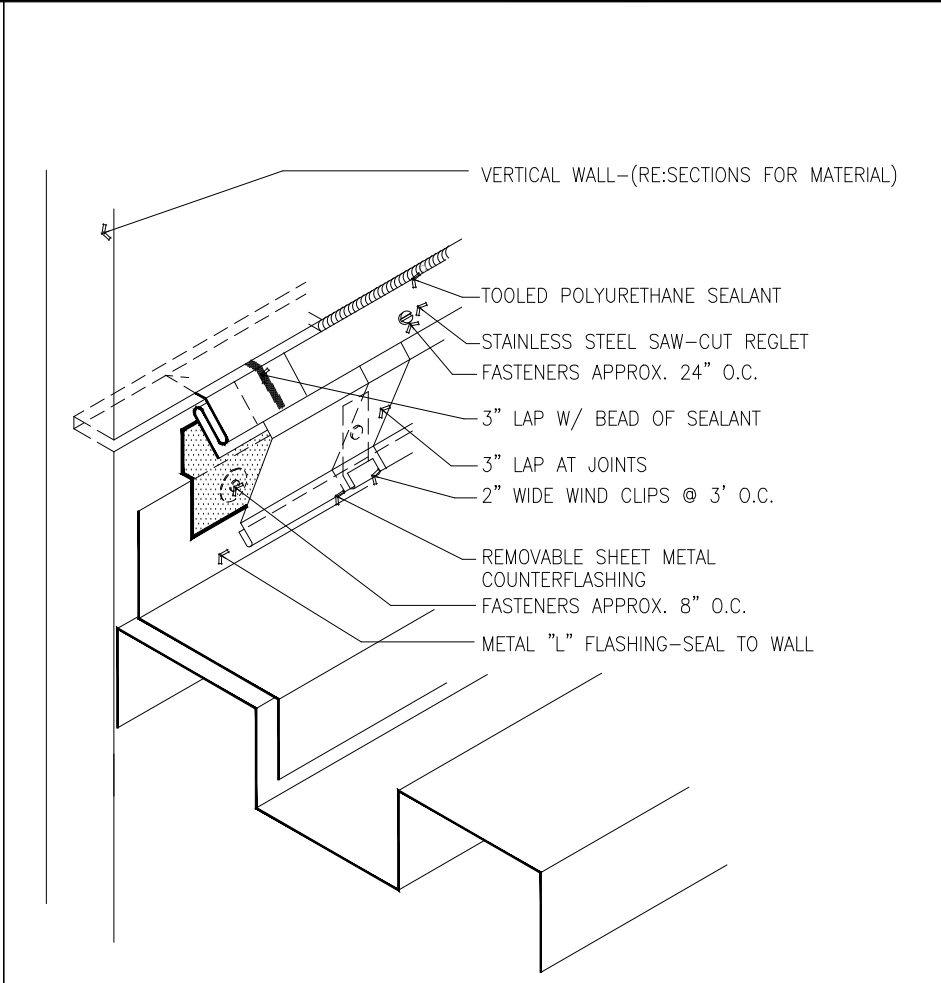
A5



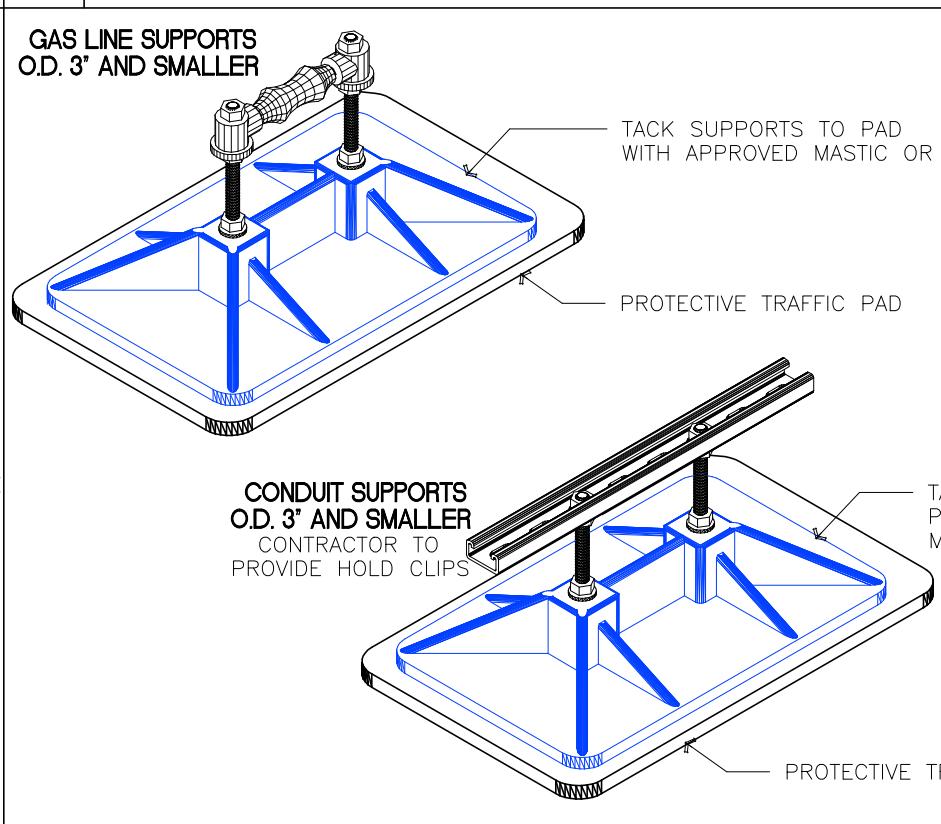
6 TRANS. TO SLOPED ROOF NTS



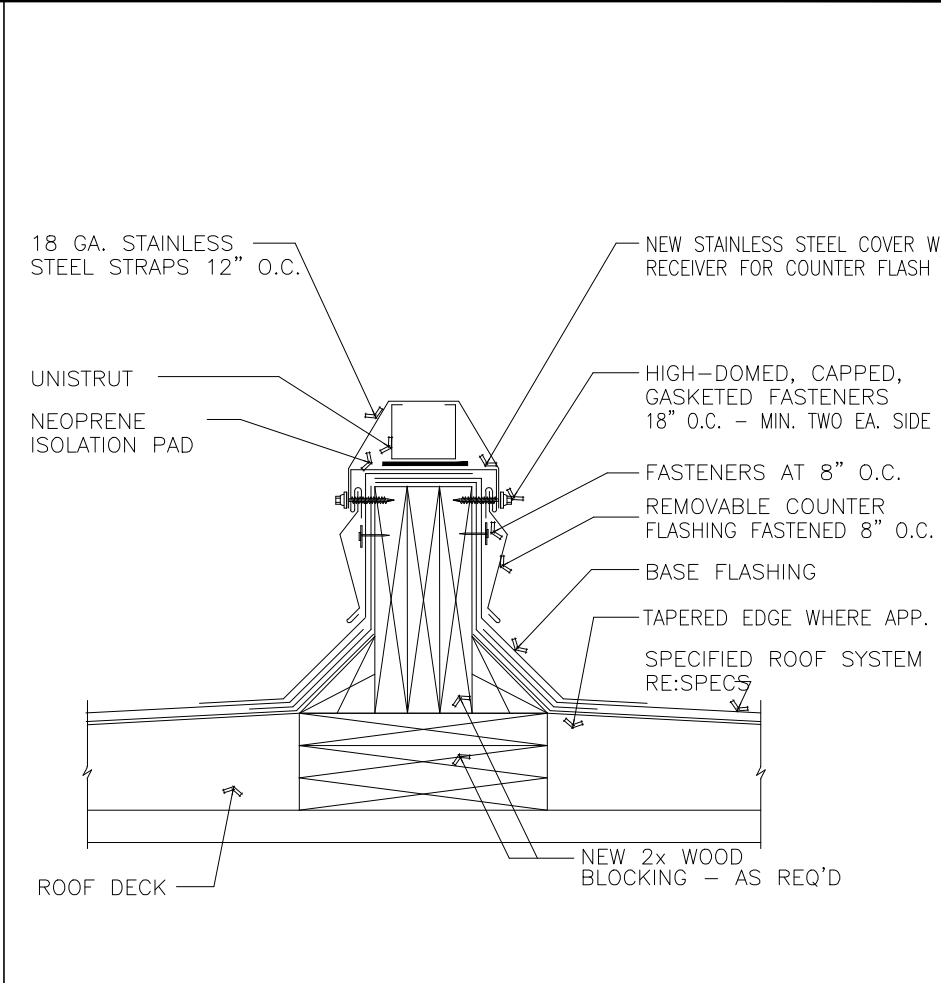
3 HOT STACK GENERAL INFORMATION N.T.S.



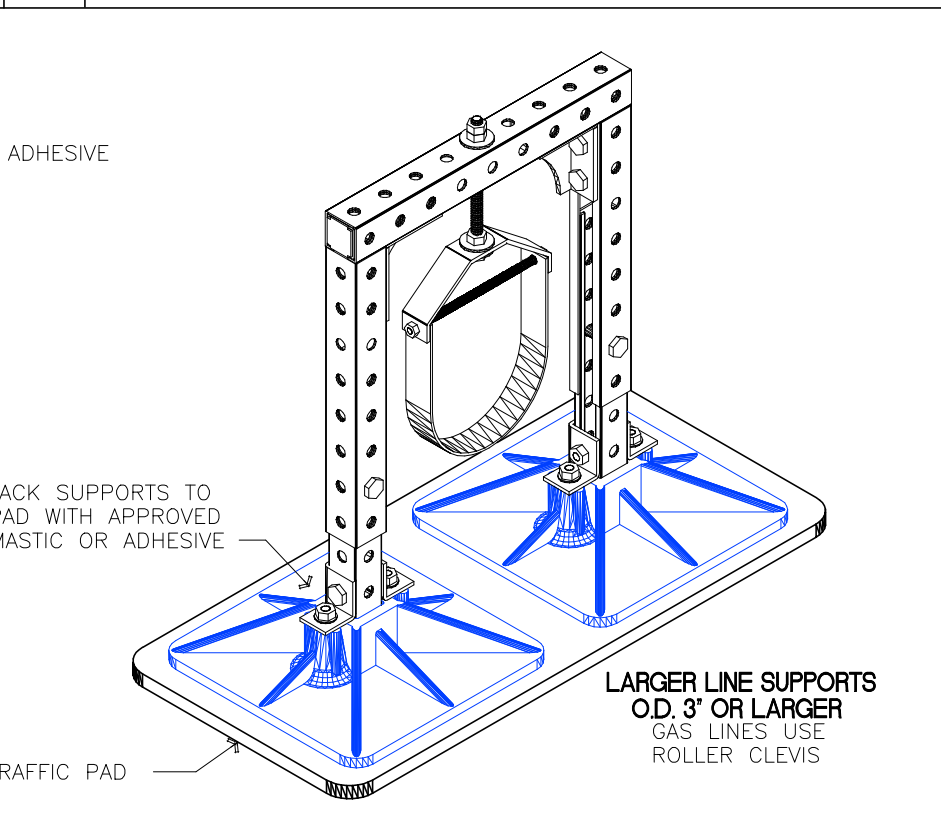
5 SAW CUT REGLET 07M-WF03.dwg NTS



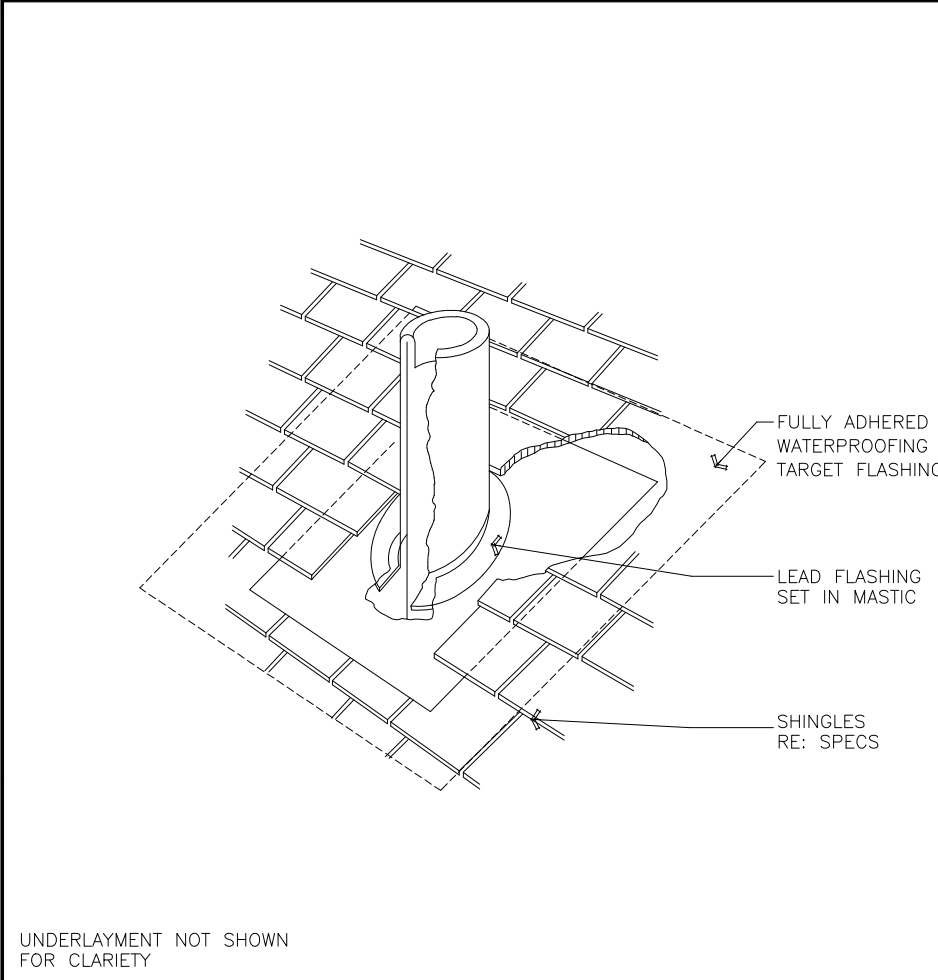
2 PIPE SUPPORT



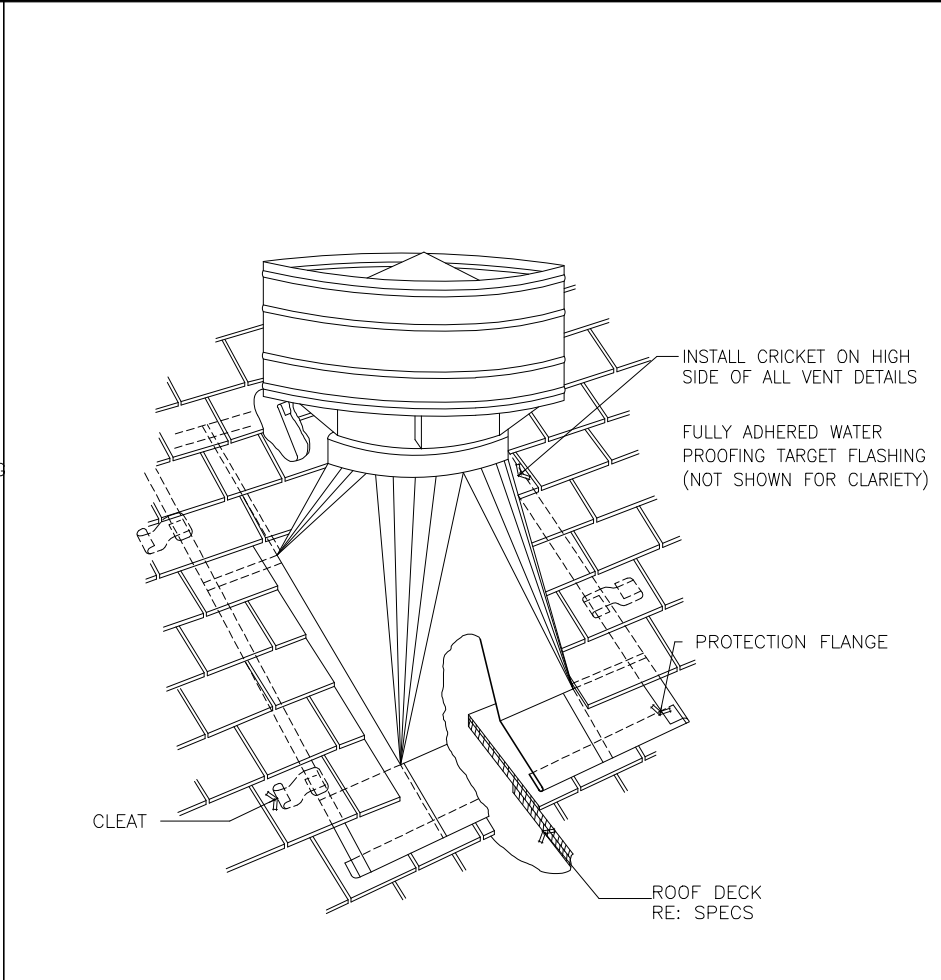
4 EQUIPMENT SUPPORT CURB 07M-PS01.dwg NTS



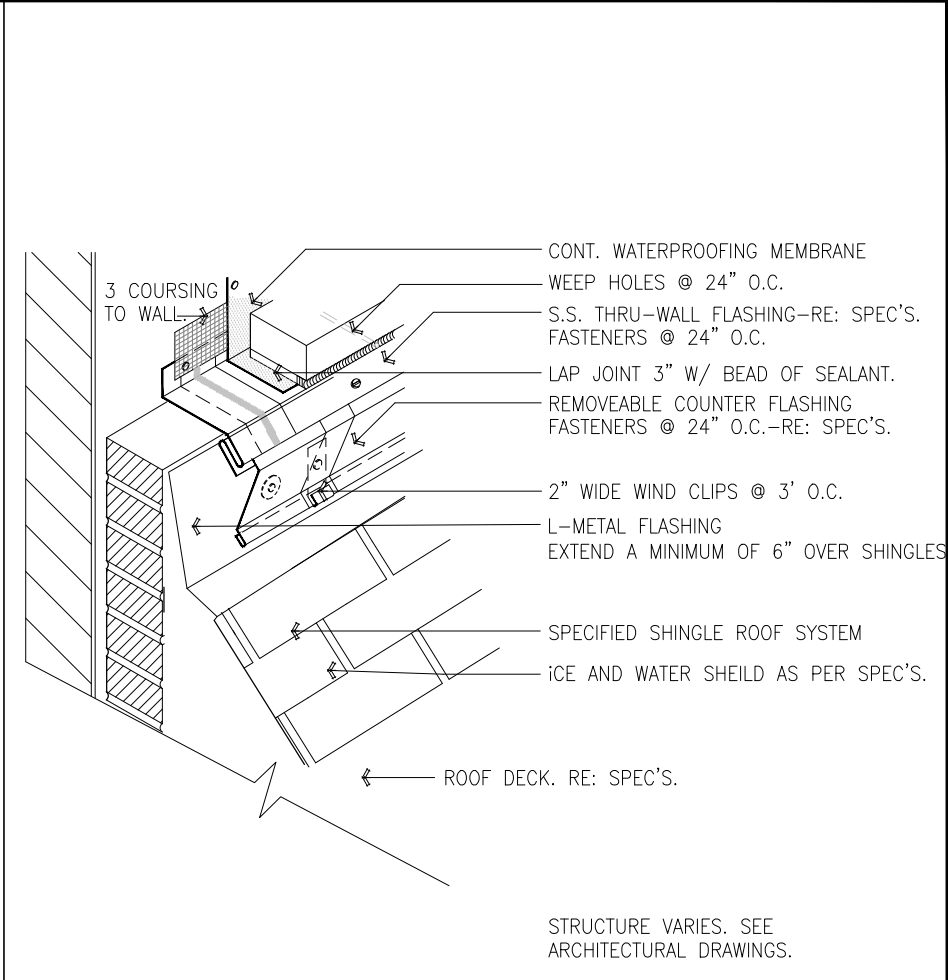
07M-PS01.dwg N.T.S.



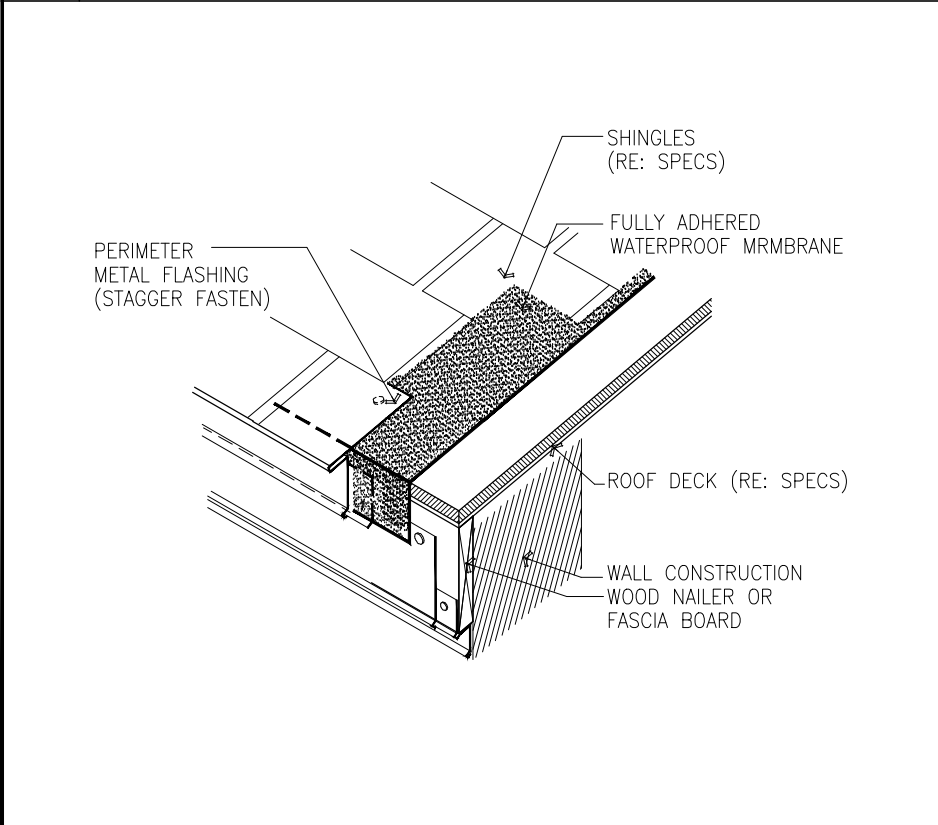
6 SOIL STACK VENT STACK.dwg NTS



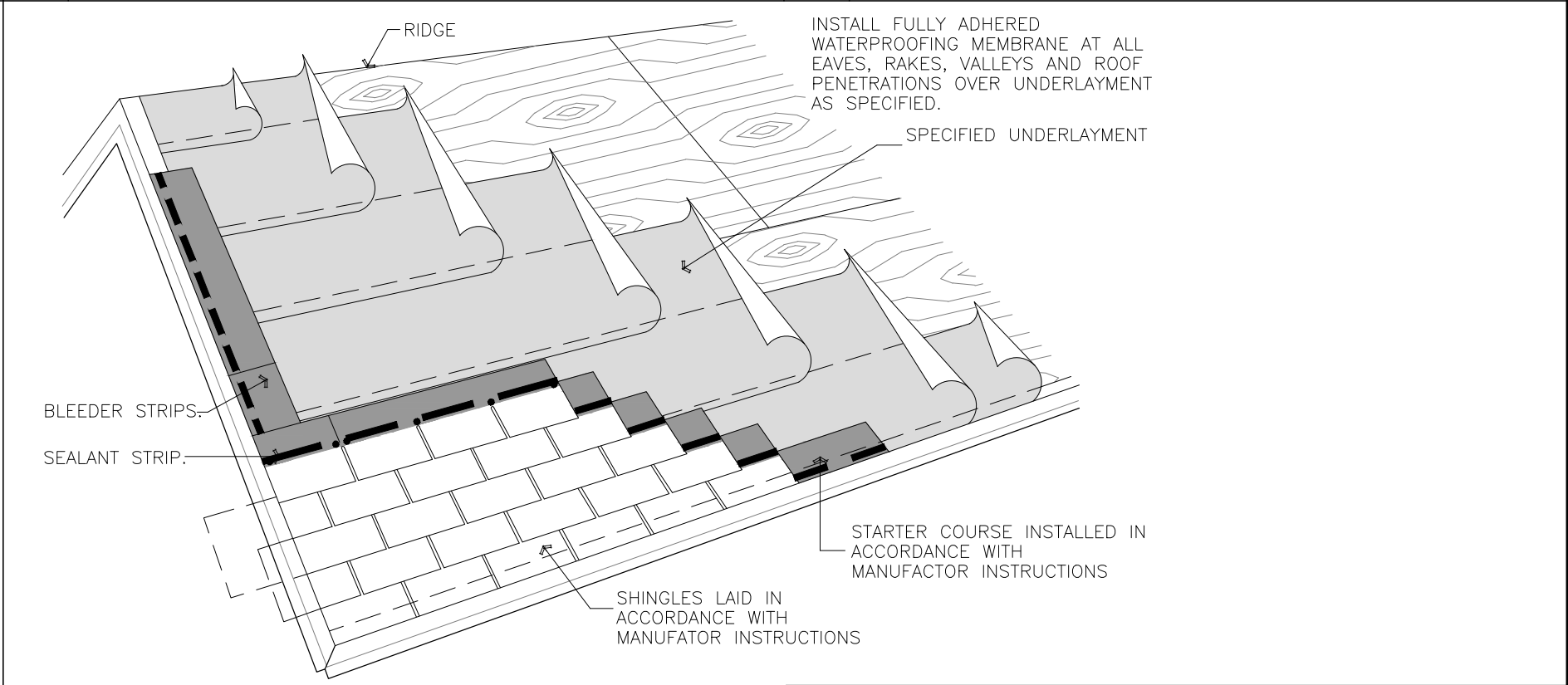
5 VENT FLASHING VENT-CAP.dwg NTS



4 BASE FLASHING Bsfsh-Thruwall.dwg NTS



3 EDGE DETAIL NTS



2 SHINGLE ROOF SYSTEM DETAIL NTS

- E. Primers, Cleaners, Top Coats: Use only materials listed as suitable in resistance to staining, compatibility and durability before proceeding.
- F. Expanded Polyethylene Joint Filler: Provide flexible, compressible, closed-cell, polyethylene of not less than 10 psi compression deflection (25 percent); except provide higher compression deflection strength as may be necessary to withstand installation forces and provide proper support for sealants, surface water absorption of not more than 0.1 pounds per square foot, as manufactured by Sonneborn, or pre-approved equal.
- G. Sealant Backer Rod: Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, non-absorptive material as recommended by sealant manufacturer for back-up of and compatibility with sealant. Where used with hot-applied sealant, provide heat-resistant type, which will not be deteriorated by sealant application temperature as indicated.
- H. Bond Breaker Tape: Provide polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape where applicable.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Temperatures: Do not install sealants when air temperature is under 40 degrees F. Sealants may be warmed to ease installation when recommended by the manufacturer.
- B. Tooling: Tool exposed joints to a slightly concave surface using slicking materials recommended by the manufacturer. The tooling procedure shall press sealant against the sides of the groove. No materials shall be left "feathered" out or smeared on the abutting materials. If necessary, protect adjacent surfaces with tape. Completed joints shall have a uniform professional appearance. Use an anti-tack compound on sealant that does not set up fast enough to avoid dust collection.
- C. Sealant Back-Up: Provide back-up filler where groove depth is too great to fill with sealant. Review joint design with Architect.
- D. Compressive Filler: Seal vertical expansion joints with fillers. Provide compressible filler twice the width of the joint and with a depth of 1-1/2 times the compressed width. Lap ends 2 inch minimum.
- E. Seal ends together in such a manner to allow natural drainage. Install filler by compressing material and sliding into joint. Align filler on one face of the joint before it expands to the full joint width.

END OF SECTION