

Project Manual

for

2018 Reroofing Package

for the

SANTA FE INDEPENDENT SCHOOL DISTRICT

June 25, 2018

BEAM Project No.: 1879

ISSUE FOR PROPOSAL

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DOCUMENT AA - REQUEST FOR COMPETITIVE SEALED PROPOSALS

Competitive Sealed Proposals for the work identified below in accordance with Proposal Documents and addenda as may be issued prior to date of proposal opening will be received by the Board of Trustees, Santa Fe Independent School District, until proposal closing date and time, as identified below. Proposals from Offerors will then be opened in public and read aloud.

OWNER: Santa Fe Independent School District
4133 Warpath
P.O. Box 370
Santa Fe, Texas 77510
Phone: (409) 925-3526

PROJECT: **2018 Reroofing Package**
Santa Fe Junior High School
4132 Warpath Ave
Santa Fe, Texas 77510

E.Y. Cowen Education Center
4133 Warpath
Santa Fe, Texas 77510

BUDGET: Santa Fe Junior High School - \$1,510,000.00
E.Y. Cowen Education Center - \$625,000.00

PRE-PROPOSAL Tuesday, June 26, 2018 at 10:00 AM, at the E.Y. Cowen Education Center. Representatives of the Architect and Owner will be present at this meeting. All Offerors are encouraged to attend.

PROPOSAL DATES AND TIMES: Thursday, July 12, 2018;
2:00 PM

LOCATION OF PROPOSAL OPENING: Santa Fe Independent School District
E.Y. Cowen Education Center
4133 Warpath Ave
Santa Fe, Texas 77510

ARCHITECT: BEAM Professionals, A PBK Company
11 Greenway Plaza 22nd Floor
Houston, Texas 77046
Phone: 713-940-3201 Fax: 713-961-4571

Qualified Offerors (General Contractors) may obtain one (1) set of plans and specifications at place identified below upon deposit of \$25.00 per set with check made payable to PBK Architects, Inc. The deposit will be refunded when the plans and specifications are returned promptly in good condition.

Proposal Documents may be obtained from the following address:

PBK Architects, Inc.
11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
(713) 965-0608

Office Hours are 8:30 AM to 5:30 PM

FULL REFUND: Deposits will be returned provided all Contract Documents and addenda are returned to the Architect complete with all sheets bound in their original order within ten (10) days of proposal.

FORFEIT OF DEPOSIT: When the Documents are not returned under the conditions specified, none of the deposit will be returned. However, the Documents shall remain the property of the Owner and must be returned.

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

Name of Offeror (Roof Contractor)
2018 Reroofing Package
Santa Fe Independent School District
Attn: Mr. Lee Townsend, Chief Financial Officer

The Owner reserves the right to reject any and all proposals and to waive any irregularities in the Competitive Sealed Proposal process.

No proposal shall be withdrawn within 30 days after the proposal opening without the specific consent of the Owner.

PROPOSAL BOND: A Proposal Bond from a bonding company acceptable to the Owner or a certified check in an amount equal to 10% of the greatest amount proposal **must** accompany each Offeror's proposal.

PAYMENT BOND AND PERFORMANCE BOND: A Payment Bond and Performance Bond, each in an amount equal to 100% of the Contract Sum conditioned upon the faithful performance of the Contract will be required. Please note that all bonding companies presented must be acceptable to the Owner.

The prevailing rates of wages are the minimums that must be paid in conformance with all applicable laws of the State of Texas.

All Offerors submitting a proposal are encouraged to visit the site. All Offerors submitting a proposal are encouraged to attend the proposal opening.

Subcontractors and Suppliers intending to submit proposals to General Construction Offerors are required to prepare their proposals based on a complete set of proposal documents. If after reviewing the complete set of proposal documents, Subcontractors and Supplier Offerors desire to purchase individual drawings and specification sections for their proposal convenience, they may do so by ordering the specific drawings and specifications directly from the reproduction company. Each Offeror purchasing a partial set of proposal documents is responsible for determining exactly which documents he requires and is responsible for all costs associated with printing and delivery. Subcontractors and Suppliers exercising this option must agree to do so on the basis that 1) all documents shall be returned to the Architect, without refund, after submitting a proposal and 2) documents shall not be used on other construction projects. Successful Subcontractors and Supplier Offerors may retain their Proposal Documents until completion of the construction.

END OF DOCUMENT AA

DOCUMENT AB - INSTRUCTIONS TO OFFERORS

1.1 QUALIFIED OFFERORS

- A. Competitive Sealed Proposals will be accepted from qualified Offerors for the entire scope of work described in the Contract Documents. As a prerequisite to an Offeror's qualifying for the award of contract on this work, the Offeror must complete each item of the Contractor's Qualification Statement (AIA Document A305). The Statement forms may be obtained from the Houston Chapter of the American Institute of Architects, 315 Capitol, Suite 120, Houston, Texas 77002, (713) 520-0155. In addition to the information contained in the Statement form, offerors shall also address the selection criteria issues listed under the paragraph below for Determination of Successful Respondent and Award of Contract. **The Statement and other requested information shall be submitted at the time of receipt of Proposals one (1) original, two (2) copies for the Owner and one (1) electronic submission on a USB thumb drive.**

Qualification statements submitted by FAX transmission will not be accepted.

- B. The primary purposes of the evaluation process will be to:
1. Gather information for the Owner's evaluation procedure.
 2. Enable the Owner and/or Architect to evaluate the Offeror's qualifications.
- C. After review of Proposals and Contractor's qualifications evaluation the Owner will make his decision and each Offeror will be notified.
- D. In arriving at his opinion concerning the Offeror's qualifications, the Architect will use the same criteria that the Owner will use in determination of the successful Offeror as detailed hereinafter.
- E. In the event a proposed Offeror fails to submit the specified Contractor's Qualification Statement at time of receipt for Proposals, such noncompliance shall be considered by both the Owner and Architect as a negative factor in the determination of the successful Offeror.

1.2 OFFEROR'S PRESENTATION

By submission of a Proposal to the Santa Fe Independent School District the Offeror attests to and affirms that the submitted proposal accounts for and includes the items described in the statements below:

- A. He has read and understands the Proposal Documents and his Proposal is made in accordance therewith.
- B. He has visited the site, has familiarized himself with the local conditions under which the work is to be performed and has correlated his observations with the requirements of the proposed Contract Documents.
- C. He agrees to comply with the requirements of the following paragraph. These requirements are absolute, and any Offeror who subsequently does not agree to comply with these requirements will automatically disqualify himself from proposing or receiving award of the contract.
- D. The Offeror agrees:
1. Work on the project will begin immediately upon receipt of signed Contract or Notice to Proceed.
 2. Offeror will participate as a team member in cooperation with the Project Architect.

3. The Offeror will assign a competent full-time superintendent, to project, and that superintendent shall be maintained on the project for the duration of the project, subject only to his continuous employment.
4. Offeror shall carry and keep in full force for the duration of the Project, insurance coverage for builder's risk, workmen's compensation, comprehensive general liability, and automobile liability as required by the General Conditions and/or Supplementary General Conditions of the Specifications.
5. Each Offeror by making his Proposal represents that his Proposal includes only material and equipment specified in the Proposal Documents and supplemented, if necessary, for a complete and operating system.
6. Where subcontract work is involved and where Acceptable Subcontractors are designated for particular sections or phases of the Work, each Offeror by making his Proposal represents that his Proposal includes only firms designated as Acceptable Subcontractors.
7. Each Offeror (and sub-offeror or supplier submitting a proposal to a Offeror) shall submit an affidavit stating that no asbestos PCBs or lead building materials shall be used.

1.3 DEFINITIONS

- A. Proposal Documents include the Request for Competitive Sealed Proposals, Instructions to Offerors, the Proposal Form, all required affidavits, and the Contract Documents.
- B. The Contract Documents for the work consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, Supplementary and any other Conditions), the Drawings, the Specifications, and all Addenda issued prior to receipt of proposals.

1.4 PROPOSAL DOCUMENTS

- A. Proposal Documents include the Request for Competitive Sealed Proposals, Instructions to Offerors, the Proposal Form, and the proposed Contract Documents, including any Addenda issued prior to receipt of proposals. The Contract Documents for the work consist of the Owner-Contractor Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to receipt of proposals.

1.5 PROPOSAL PROCEDURES

- A. A proposal is invalid if it has not been received at the designated location prior to the time and date for receipt of proposals indicated in the Request for Competitive Sealed Proposals, or prior to any extension thereof issued to the Offerors by Addenda.
- B. All requested Alternates shall be proposed. If no change in the Base Proposal is required, enter "No Change".
- C. Prior to the receipt of Proposals, Addenda will be forwarded by the Architect and will be available for inspection wherever the proposal documents are kept available for that purpose.
- D. Proposals will be received in duplicate only on the Owner's Form of Proposal for the work as indicated by the Proposal Documents, filled in, and enclosed in a sealed envelope addressed as follows:

Name of Offeror (Roof Contractor)
2018 Reroofing Package
Santa Fe Independent School District
Attn: Mr. Lee Townsend, Chief Financial Officer

- E. The Proposal Form **must be accompanied by** a Proposal Bond or Certified Check in the amount of 10% of the proposal.
- F. All proposals must be delivered sealed to the address provided in document AA at or before the time and date set. Proposals will be received at no other place. If Proposal is sent by U.S. Mail, it must be sent Registered Mail.
- G. A proposal may be withdrawn only upon request by the Offeror or his duly authorized representative, provided such request is received by the Owner at the place designated for receipt of proposals and prior to the time fixed for the opening of proposals. A withdrawal of a proposal shall not be effective unless a written confirmation of the withdrawal is received by the Owner at said place within forty-eight (48) hours before the time fixed for the opening of proposals. The Proposal Bond will be returned with the proposals if withdrawn in accordance with the above. The withdrawal of a proposal does not prejudice the right of the Offeror to file a new proposal at the time and place stated. No proposal may be withdrawn after the time fixed for the opening of proposals for a period of thirty (30) days.

1.5 INTERPRETATION OF PROPOSAL DOCUMENTS

- A. Offerors and sub-offerors requiring clarification or interpretation of the Proposal Documents shall make a written or verbal request which shall reach the Architect at least ten (10) days prior to the date for receipt of proposals.
- B. Any interpretation, correction or change of the Proposal Documents will be made by Addendum. Interpretations, corrections or changes of the Proposal Documents made in any other manner will not be binding.

1.6 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

- A. The materials, products and equipment 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.
- 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 as described in Section 01 32 16 – Products and Substitutions. 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. No substitutions will be considered after the Contract award.

1.7 REJECTION OF PROPOSALS

- A. The Owner shall have the right to reject any or all proposals and to reject a proposal not accompanied by any required proposal security, or by other data required by the Proposal Documents, or to reject a proposal which is in any way incomplete or irregular.
- B. The Owner reserves the right to reject any or all proposals and to waive any formalities or irregularities and to make the award of the contract in the best interest of the Owner.
- C. The Owner reserves the right to reject any proposal if the evidence submitted by, or investigation of, such offeror fails to satisfy the Owner that such offeror is properly qualified to carry out the obligations of the contract and to complete the work therein. Award may be made to other than the low-dollar offeror and given the one offering the "best value" to the school district, in addition to the purchase price, based on the published selection criteria and on its ranking evaluation.
- D. Do not submit voluntary alternates. The Owner reserves the right to reject any proposal which is accompanied by conditional or qualifying statements, or "voluntary alternates".

1.8 INSURANCE

- A. Each Offeror shall include in his proposal the complete cost and shall carry and keep in full force for the duration of the project, insurance coverage required under the General Conditions and Document CB - Supplementary Conditions.

1.9 WINDSTORM INSURANCE

- A. Contractor shall be responsible for the application of the Windstorm Building Inspection, which must be submitted to the Windstorm Inspections at the Texas Department of Insurance before construction begins. FORM WPI-1, the Windstorm Certification Inspection work and the completion of FORM WPI-2, are not included in the Engineer's scope of services. The Contractor is responsible for including the cost of Windstorm Certification in his base proposal price to the Owner. This service can be provided by a licensed engineer appointed by the Commissioner of Insurance, to inspect and notify compliance of structures for eligibility of Windstorm and Hail insurance through the Texas Windstorm Insurance Association. Arrangements for Windstorm certification inspections and submission of FORM WPI-1 shall be made before construction begins.

1.10 PERFORMANCE BOND AND PAYMENT BOND

- A. Each Offeror shall include in this proposal the premium costs for 100% Performance Bond and 100% Payment Bond. These bonds shall cover the faithful performance of the contract and payment of all obligations arising thereunder in such form as the Owner may prescribe. The bonding companies must be acceptable to the Owner. The selected Offeror shall deliver the required bonds to the Owner not later than the date of execution of the Contract.

1.11 PROPOSAL SECURITY

- A. No proposal will be considered unless it is accompanied by a Certified or Cashier's Check or Proposal Bond executed on the form attached. In either case the amount shall be not less than ten percent (10%) of the greatest amount proposed (considering alternates, if any). The proposal security shall insure the execution of the contract and the furnishing of an acceptable Performance Bond and Payment Bond by the successful Offeror within ten (10) days after notification of award to such Offeror and that this proposal will not be withdrawn within thirty (30) days after date of opening of proposals without the consent of the Owner. Proposal Bond shall be prepared in the identical form of AIA Document A310 or the form attached.

1.12 SUBMISSION OF POST PROPOSAL INFORMATION

- A. The apparent Selected Offeror shall within three (3) days after proposals are received submit the following:
 - 1. A designation of the work to be performed by the Offeror with his own forces.
 - 2. An experience profile of the selected Offeror's superintendent scheduled to work on this project. In addition, the apparent selected Offeror shall cooperate with the Owner, supplying requested information to substantiate the qualifications of the superintendent. If, in the opinion of the Owner, the superintendent does not qualify, the Owner may request the submission of another superintendent and more information. The Owner reserves the right to reject the apparent selected Offeror if an acceptable superintendent is not presented.
- B. The Selected Offeror shall within five (5) days thereafter submit the following:
 - 1. A statement of costs for each major item of work included in the proposal as described in Section 01370 – Schedule of Values. Each section of specifications will be considered a major item of work and shall be shown as a separate cost item.

1.13 AWARD OF CONTRACT

- A. The Offeror to whom the award is made will be promptly notified. If an Offeror (a) withdraws his proposal within 30 days after the date of time fixed for the opening of proposals in the Request for Competitive Sealed Proposals, or (b) fails or refuses to execute the Agreement, or other required forms within ten (10) days after the same are presented to him for signature, or (c) fails or refuses to furnish properly executed Performance Bond and Certification of Required Insurance within 15 calendar days of execution date of the Agreement, the Owner may award the work to another Offeror or Offerors or may call for new proposals.
- B. The Offeror will be required to (a) submit his Proposal and Proposal Bond, (b) execute Contract and Performance and Payment Bonds, and (c) submit Certification of required insurances, all using the Owner's own forms for such respective purposes.
- C. Proposal Bond is forfeited if proposal is withdrawn after the proposal opening, or Contract Documents are not executed in accordance with the above.

1.14 NOTICE TO PROCEED

- A. The Offeror shall not commence work under this Contract until he receives the written Notice to Proceed, or the Contract is duly signed by the Owner.

1.15 COMPLETION TIME

- A. Offerors shall familiarize themselves with the Owners requirements concerning the project schedule as described in Section 01 32 16 of this Project Manual.
- B. Having thoroughly familiarized himself with the conditions as they exist at the building sites and acquainted himself with the labor supply and the material market, the Offeror will state in his proposal that he agrees to be substantially complete with the work by the date stated above.
- C. It is therefore expressly agreed as a part of the consideration inducing the Owner to execute this contract that the Owner may deduct liquidated damages from the final payment made to the Contractor for each and every calendar day beyond the agreed date which the Contractor shall require for Substantial Completion of the work included in

this contract. It is expressly understood that the said sum per day is agreed upon as a fair estimate of the pecuniary damages which will be sustained by the Owner in the event that the work is not completed within the agreed time, or within the legally extended time, if any, otherwise provided for herein. Said sum shall be considered as liquidated damages only and in no sense shall be considered a penalty, said damage being caused by additional compensation to personnel, for loss of interest on money and other miscellaneous increased costs, all of which are difficult of exact ascertainment. Also, any disruption of Owner's use of the existing facilities or newly completed facilities will also be subject to liquidated damages. Refer to Section 01 32 16 for additional requirements. Delays, disruption of use, failures to complete, and liquidated damages are fully described under Article 8.3 of the Supplementary Conditions.

The definition of Substantial Completion is found in Article 9.8.1 of the AIA General Conditions and Supplementary Conditions bound herein.

1.16 FELONY CONVICTION NOTIFICATION

- A. Section 44.034, of the Texas Education Code requires a person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony. Subsection (b) states "a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for services performed before the termination of the contract." Subsection (c) states "this section does not apply to a publicly held corporation."
- B. The Offeror **must** execute Document AE, Statement of Affirmation and submit with proposal.

1.17 AFFIDAVIT OF NON-DISCRIMINATORY EMPLOYMENT

- A. The Offeror, and sub-offerors, shall agree to refrain from discrimination in terms and conditions of employment to the basis of race, color, religion, sex, or national origin, and agrees to take affirmative action as required by Federal Statutes and Rules and Regulations issued in order to maintain and insure non-discriminatory employment practices.
- B. The Offerors **must** execute Document AF, Affidavit of Non-Discriminatory Employment and submit with Proposal. The sub-offerors shall execute Document AF, Affidavit of Non-Discriminatory Employment before commencing work on this Project. Offerors and sub-offerors who have not executed this document will not be eligible to work on this project.

1.18 LIST OF SUBCONTRACTORS

- A. The Offeror shall supply a list of the following major:
 - 1. Mechanical
 - 2. Electrical
 - 3. Plumbing
 - 4. Masonry
 - 5. Concrete
 - 6. Steel
 - 7. Any other prudent subcontractor.
- B. The selected Offeror **must** execute Document AG, List of Subcontractors.

1.19 AFFIDAVIT OF NON-ASBESTOS, LEAD, AND PCB USE IN PROJECT

- A. The use of any construction process or the installation of any asbestos, lead and PCBs or material containing asbestos, lead and PCBs is strictly prohibited for this Project.
- B. Prior to submitting a proposal, Offerors shall notify the Architect, in writing, of any materials in these specifications which are known to contain or are likely to contain asbestos, lead or PCBs.
- C. The Offeror, and sub-offerors shall agree to refrain from using products which are known to contain asbestos, lead, and PCB containing materials as applicable to the project. They shall also affirm that lead or lead bearing materials have not been incorporated into potable water systems, and that lead sheet flashing used in through roof plumbing penetration applications is the only lead on the Project.
- D. The Selected Offeror (Contractor) **must** execute Document AH, Affidavit of Non-Asbestos, Lead, and PCB Use and submit at Project Closeout. The Subcontractors to the Contractor **must** execute Close-out Form "D", attached to section 01 77 00, Subcontractors Hazardous Material Certificate and submit at Project Closeout.

1.20 PROPOSAL EVALUATION WAIVER

- A. By submitting a proposal, each offeror agrees to waive any claim it has or may have against the District and its respective employees, the Program Manager and their respective employees, the Architect/Engineer and consultants, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal; waiver of any requirements under the Proposal Documents, acceptance or rejection of any proposals; and award of the contract.
- B. All Offeror's **must** execute Document AI, Proposal Evaluation Waiver and submit with their Proposal.

1.21 CRIMINAL HISTORY RECORDS

- A. Prior to commencing any work on this Project, the Selected Contractor and their selected subcontractors, shall certify, on the form provided herein as Document AJ, that for each of its employee who will have direct contact with students, the Selected Contractor has obtained, as required by Texas Education Code Section 22.0834:
 - 1. national criminal history record information from a law enforcement or criminal justice agency for each employee of the Selected Contractor hired before January 1, 2008 who will have direct contact with students; and
 - 2. national criminal history record information from the Texas Department of Safety for each employee of the Selected Contractor hired on or after January 1, 2008 who will have direct contact with students; Fingerprinting is required and shall be provided by the contractor (applicant) and administered through FAST (Fingerprint Applicant Services of Texas) which will be recorded by the District in the FACT (Fingerprint-based Applicant Clearinghouse of Texas). Currently applicant must obtain fingerprinting from L-1 Identity Solutions Company, (888) 467-2080, or schedule an appointment online at: <https://tx.ibtfingerprint.com/>.
- B. Any personnel who will have direct contact with students must not have been convicted of an offense identified in Texas Education Code Section 22.085.

- C. The Selected Contractor shall execute and submit Document AJ, Certification of Criminal History Record Information Review by Contractor-Employer along with required Schedule 'A' documenting proposed employees to be working on site, within 10 days after receipt of Notice To Proceed and prior to commencement of Work. The selected subcontractors shall submit Schedule 'A' to the District prior to commencing any work on this Project.
- D. Furthermore, an updated Schedule 'B' shall be submitted weekly to the District indicating any changes to contractor and subcontractor personnel with accompanying certifications and criminal history records. Any fingerprinting and photographing required by the aforementioned code will be the responsibility of the Contractor/Subcontractor-Employer.

1.22 CONFLICT OF INTEREST QUESTIONNAIRE

- A. According to Local Government Code, Chapter 176, a person or an agent of a person who contracts or seeks to contract for the sale or purchase of property, goods, or services with any government agency must file a completed Conflict of Interest Questionnaire with the records administrator of the local government not later than the seventh business day after the date that the person begins contract discussions or negotiations with the District or submits to the District an application, response to a request for proposals or bids, correspondence, or another writing related to a potential agreement with the District.
- B. All Offeror's and sub-offeror's proposing to do work with the District **must** execute Document AK, Conflict of Interest Questionnaire and submit to the District's Legal Department within seven (7) days of the Proposal Date. This requirement will be waived if the Offeror or sub-offeror has previously submitted such document to the District within the last year. In such case, provide written notification and attach to the Proposal.

1.23 AVAILABILITY OF MATERIALS AND SYSTEMS

- A. A serious effort has been made to select only materials that are systems that are readily available. As far as is known at proposal time all items are either available "off the shelf" or within a relatively short period of time. If during the proposal period, an Offeror becomes aware of an availability or delivery problem with any of the specified systems or materials, he should notify the Architect immediately. The Architect will promptly explore possibilities for selecting other systems or materials which would circumvent the problem and notify Offerors of any changes in an addendum, otherwise it will be understood that only specified systems and materials that are readily available are included in the proposals.

1.24 DETERMINATION OF SUCCESSFUL RESPONDENT AND AWARD OF CONTRACT

- A. In determining the Selected Offeror, a Selection Committee will evaluate the information derived from the Offeror's (General Contractor's) Qualification Statement, the Proposal Form, and other selection criteria including, but not be limited to the following:
 - 1. The purchase price; (weight 30 %)
 - 2. The reputation of the vendor and of the vendor's goods or services; (weight 15%)
 - 3. The calendar days; (weight 15%)
 - 4. The extent to which the goods or services meet the district's needs; (weight 15%)
 - 5. The vendor's past relationship with the district; (weight 10%)
 - 6. The vendor's past record of completing projects on time; (weight 15%)
- B. The selection committee consisting of administrator, architects, consultants and other staff will make an initial evaluation of the proposals. Its recommendation will be considered by the Santa Fe ISD Board of Trustees ("Board"). The District reserves the right to review the recommendation with their administration and others deemed appropriate by the District prior to review by the entire Board. The final decision-making authority on the proposals

rests with the full Board. Decision-making authority has not been delegated to any person or entity other than the Board.

- C. By submitting a proposal, each offeror agrees to waive any claim it has or may have against the District and its respective employees, the Architect/Engineer and consultants, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal; waiver of any requirements under the Proposal Documents: acceptance or rejection of any proposals; and award of the contract.
- D. The District will make such investigations as it deems necessary to determine the ability of the offeror to perform the Work, and the offeror shall furnish all such information and data for this purpose as may be requested. The District reserves the right to reject any proposal if the evidence submitted by, or investigation of, such offeror fails to satisfy the District that such offeror is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.
- E. The District reserves the right to reject any or all proposals and to waive any formalities or irregularities and to make the award of the contract in the best interest of the District.
- F. A decision regarding determination of the successful Offeror will be made by the District as soon as practical.

1.25 USE OF ASBESTOS FREE MATERIALS, PRODUCTS AND SYSTEMS

- A. The Offeror is reminded to refer to the Paragraph above for requirements during the Proposal period and the following requirements during performance of the Work regarding the use of asbestos free materials, products and systems in the Project.
 - 1. Since many materials, products and systems are proprietary, it is not possible to know all of the materials or components which go into producing such material, product or system without the manufacturer divulging trade secrets or patent information. Every effort has been made to specify materials, products or systems, which either as an "off the shelf" material, product or system or as a custom material, product or system do not contain asbestos.
 - 2. It is the Contractor's responsibility to submit an affidavit from the manufacturer to ascertain that every material, product or system used in the Project does not contain asbestos. In the event the material, product or system is found to contain asbestos, the Contractor shall offer for the Architect's consideration a substitution which he knows does not contain asbestos.
 - 3. Even though a material, product or system is specified or a specification is based on a particular material, product or system, the Contractor will not be relieved from the responsibility to ascertain that materials, products and systems used in the Project do not contain asbestos. Under no circumstances shall a material, product or system which is known, suspected or found to contain asbestos be used on the Project.
 - 4. If a material, product or system containing asbestos is used, the Contractor shall remove and replace the material, product or system with one which is asbestos free at no additional expense to the Owner, including removal and replacement of other materials affected by the removal of the asbestos bearing material, product or system, i.e. gypsum wallboard removed, replaced, and repainted on account of insulation being removed, etc.

END OF DOCUMENT AB

DOCUMENT AC - COMPETITIVE SEALED PROPOSAL FORM - BASE PROPOSAL

**2018 REROOFING PACKAGE
SANTA FE INDEPENDENT SCHOOL DISTRICT**

Submitted
by: _____

Date: _____ Phone No.: _____

To: Board of Trustees
Santa Fe Independent School District
4133 Warpath
P.O. Box 370
Santa Fe, Texas 77510

Having examined Proposal and Contract Documents prepared by BEAM, dated June 25, 2018 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 30 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.
5. 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 PROPOSAL

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

A. **BASE PROPOSAL 1 - E.Y. Cowen Education Center Reroof**

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

B. **BASE PROPOSAL 2 - Santa Fe Junior High School Reroof**

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

II. ALLOWANCES

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

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 2:00 PM, July 12, 2018

- A. Owner's Contingency Allowance Amount at E.Y. Cowen Education Center: \$25,00.00
- B. Owner's Contingency Allowance Amount at Santa Fe Junior High School: \$75,00.00

III. CONTRACT TIME

Undersigned agrees to begin Work upon Notice to Proceed and be Substantially Completed to be determined.

IV. UNIT PRICES

- A. **Unit Price No. 1:** Removal and replacement of treated wood blockings: *(Include 250 linear feet of each dimension in Base Proposal).*

Unit Price No. 1a (2 x 4) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 1b (2 x 6) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 1c (2 x 8) Dollars \$ _____/LF
(Amount in figures)

Unit Price No. 1d (2 x 12) Dollars \$ _____/LF
(Amount in figures)

- B. **Unit Price No. 2:** Lightweight and metal deck replacement: *(Include 1,000 square feet in Base Proposal 2 – Santa Fe Junior High School Reroof).*

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

- C. **Unit Price No. 3:** Installation of additional base ply: *(Include 1,500 square feet in each Base Proposal).*

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

V. ADDENDA

Undersigned acknowledges receipt of Addenda Nos. _____
dated _____, 2018.

VI. CHANGES IN THE WORK

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

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 2:00 PM, July 12, 2018

VII. 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.

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in the proposal process.

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

Authorized Signature

Title

Name of Contracting Firm

Address

Telephone

Date

END OF DOCUMENT AC

NOTE: THIS DOCUMENT MUST BE SUBMITTED BY 2:00 PM, July 12, 2018

DOCUMENT AD - PROPOSAL BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____,
as Principal, and _____, as Surety, are
held and firmly bound unto the Santa Fe Independent School District, Galveston County, Texas, hereinafter
called the Owner, in the penal sum of _____
Dollars (\$_____) lawful money of the United States, for the payment of which sum well and truly
to be made, we bind ourselves, our heirs, executors, administrators and successors jointly and severally,
firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the
accompanying Proposal, dated _____, being for **2018 REROOFING PACKAGE**, the kind
and extent of work involved being set forth in detail in the proposed Contract Documents cited herein.

NOW, THEREFORE, if the Principal shall not withdraw the accompanying proposal within 30 days after the
date set for opening thereof, and shall within ten (10) days after the prescribed forms are presented to him
for signature, enter into a written contract with the Owner in accordance with the Proposal as accepted; and
give Bond and good and sufficient surety for the faithful performance and proper fulfillment of such contract
including payment of all persons supplying labor or materials therefor, or in the event of the withdrawal of
said proposal within the period specified, or the failure to enter into such contract and give such bond within
the time specified, if the Principal shall pay to the Owner the difference between the aggregate amount for
which the Owner may enter into a contract for the same work with another Respondent; if the latter amount
be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in
full force and virtue.

IN WITNESS WHEREOF, the above bonded parties have executed this instrument under their several seals
this _____ day of _____, 2018, the name and Corporate Seal of each
corporate party being hereto affixed and these presents duly signed by its undersigned representatives,
pursuant to authority of its governing body.

Business Address Individual Principal

Business Address Individual Principal

ATTEST:

Secretary President BY: _____

Business Address Corporate Surety

ATTEST: _____ BY: _____

END OF DOCUMENT AD

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

DOCUMENT AE - FELONY CONVICTION NOTIFICATION

Note: The Statement of Affirmation Must Be Notarized

STATEMENT OF AFFIRMATION

"The undersigned affirms that he/she is duly authorized to provide this information by the person(s) or business entity making the proposal, and the information provided below concerning felony convictions has been personally and thoroughly reviewed, and verified, and is, therefore, current, true and accurate to the best of my knowledge."

Firm's
Name: _____ Address: _____

"a.____ My firm is a publicly held corporation, therefore, this reporting requirement is not applicable."
"b.____ My firm is not owned nor operated by anyone who has been convicted of a felony."
"c.____ My firm is owned or operated by the following individual(s) who has/have been convicted of a felony:"

Name of Felon(s) _____

Details of Conviction(s) _____

PLEASE CHECK a, b, or c ABOVE AND SIGN BELOW

Offeror's
Name _____ Position/Title _____

Offeror's
Signature _____ Date _____

Subscribed and sworn to me on this _____ day of _____

Notary Public

My Commission expires _____

END OF DOCUMENT AE

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

DOCUMENT AF - AFFIDAVIT OF NON-DISCRIMINATORY EMPLOYMENT

STATE OF TEXAS)
)
COUNTY OF GALVESTON)

AFFIDAVIT

This Company, Contractor, or Subcontractor agrees to refrain from discrimination in terms and conditions of employment to the basis of race, color, religion, sex, or national origin, and agrees to take affirmative action as required by Federal Statutes and rules and Regulations issued pursuant thereto in order to maintain and insure non-discriminatory employment practices.

Company

Printed Name

Signature

STATE OF TEXAS)
)
COUNTY OF [COUNTY])

Sworn to and subscribed before me at _____, Texas, this the _____ day of _____, 2018.

Notary Public in and for [] County, Texas

END OF DOCUMENT AF

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

DOCUMENT AG - LIST OF SUBCONTRACTORS

PROJECT:
(Name, address)

ARCHITECT:
BEAM Professionals, A PBK Company
11 Greenway Plaza 22nd Floor
Houston, Texas 77046

ARCHITECT'S PROJECT NO. 1879

TO: [Contractor Name]
 [Street]
 [City, State Zip]

DATE:_____

List Subcontractors and others proposed to be employed on the above Project as required by the proposal documents.

(To be filled out by the Contractor and returned to the Architect.)

Work/ Division	Firm	Address	Phone	Fax	e-mail	Representative
-------------------	------	---------	-------	-----	--------	----------------

(Provide additional sheets as required)

END OF DOCUMENT AG

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

DOCUMENT AH - AFFIDAVIT OF NON-ASBESTOS, LEAD, AND PCB USE IN PROJECT

Upon completion of this form, return to the Architect upon close-out of the project.

PROJECT:
2018 Reroofing Package
Santa Fe Independent School District
Santa Fe Junior High School
4132 Warpath Ave
E.Y. Cowen Education Center
4133 Warpath
Santa Fe, TX 77510

ARCHITECT:
BEAM Professionals, A PBK Company
11 Greenway Plaza 22nd Floor
Houston, Texas 77046

ARCHITECT'S PROJECT NO. 1879

CONTRACTOR: _____

DATE: _____

(Name, address) _____

AFFIDAVIT

The undersigned affirms and certifies that "to the best of their knowledge and belief asbestos, lead, and PCB containing materials have not been used or incorporated into the Work and lead or lead bearing materials have not been incorporated into potable water systems", including, but not limited to those water systems for drinking fountains, all sinks, showers, bath tubs, residential and commercial kitchen equipment, ice machines, and hose bibbs, as applicable to the project, and that lead sheet flashing used in through roof plumbing penetration applications is the only lead on the Project.

Company

Printed Name

Signature

STATE OF TEXAS)
)
COUNTY OF _____)

Sworn to and subscribed before me at _____, Texas, this the _____ day of _____, 2018.

Notary Public in and for _____ County, Texas

END OF DOCUMENT AH

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED AT PROJECT CLOSE-OUT

DOCUMENT AI - PROPOSAL EVALUATION WAIVER

By submitting a Proposal, the proposer indicated below agrees to waive any claim it has or may have against the Owner, Architect, Engineers, Consultants and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any proposal. The proposer further agrees the Owner reserves the right to waive any requirements under the proposal documents or the Contract Documents, with regards to acceptance or rejection of any proposals, and recommendation or award of the contract.

NOTE: The Statement of Affirmation Must Be Notarized.

STATEMENT OF AFFIRMATION

"The undersigned affirms that he/she is duly authorized to execute this waiver by the person(s) or business entity making the proposal.

Firm's Name _____ Address: _____

Proposer's Name _____ Position/Title _____

Proposer's Signature _____ Date _____

Subscribed and sworn to me on this _____ day of _____

Notary Public

My Commission expires _____

END OF DOCUMENT AI

NOTE: THIS DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

DOCUMENTS AJ - CERTIFICATION OF CRIMINAL HISTORY RECORD INFORMATION

Certifying Affidavit submitted to:

Name of School District: _____

Mailing Address: _____

Project: _____

STATE OF TEXAS §

COUNTY OF §

(1) The undersigned representative, on behalf of the contracting firm identified below, swears and affirms to Santa Fe Independent School District (the "District") that such firm has obtained, reviewed and verified, from a law enforcement or criminal justice agency or a private entity that is consumer reporting agency governed by the Fair Credit Reporting Act (15 U.S.C. §§ 1681 et seq.) the criminal history record information of all employees hired **before January 1, 2008**, who (a) have or will have continuing duties related to the contracted services, and (b) have or will have direct contact with students. Such employees are identified by name on Schedule **A** attached hereto. The undersigned further swears and affirms no employees who meet the requirements of (a) and (b) herein and/or identified on Schedule **A** have been convicted of any offense identified in Section 22.085 of the Texas Education Code.

(2) The undersigned representative, on behalf of the contracting firm identified below, swears and affirms to the District, that such firm has obtained, reviewed and verified, from the Texas Department of Public Safety criminal clearinghouse, the national criminal history record information of all employees hired **on or after January 1, 2008**, who (a) have or will have continuing duties related to the contracted services, and (b) have or will have direct contact with students. Such employees are identified by name on Schedule B attached hereto. The undersigned further swears and affirms no employees who meet the requirements of (a) and (b) herein and/or identified on Schedule B have been convicted of any offense identified in Section 22.085 of the Texas Education Code.

(3) The undersigned firm swears and covenants that no present or future employee will provide services to the Project that involve direct contact with students unless and until such employee's national criminal history record information has been reviewed and cleared as required by Paragraph (2) above, and an updated Certification has submitted by the contracting firm to the District with an updated Schedule B identifying such employees. In the event of an emergency, an employee who has not been previously certified may only provide services that involve direct contact with students if such employee is escorted by a District representative.

(4) The undersigned firm swears and covenants that, upon receipt of information, directly or indirectly, that any employee of the contracting firm has been convicted of an offense identified in Section 22.085 of the Texas Education Code, the contracting firm will immediately remove such employee from the Project and notify the District.

(5) Furthermore, if requested by the District, the name, driver's license number, and any other information required by the DPS will be submitted to the District for any person on either Schedule A or Schedule B.

_____, being duly sworn, affirms and certifies that he/she is the
_____ (position) of _____ (contracting
firm), and that all statements and acknowledgements contained herein are true and correct, and that
he/she has the authority to bind such firm to the covenants set out above.

SUBSCRIBED AND SWORN TO BEFORE ME this _____ day of _____.

Notary Public _____ State of _____

My Commission expires _____

DOCUMENT AK - CONFLICT OF INTEREST QUESTIONNAIRE INSTRUCTIONS

According to Local Government Code, Chapter 176, a person or an agent of a person who contracts or seeks to contract for the sale or purchase of property, goods, or services with Santa Fe Independent School District must file a completed Conflict of Interest Questionnaire with the District Legal Department not later than the seventh business day after the date that the person begins contract discussions or negotiations with the District or submits to the District an application, response to a request for proposals or bids, correspondence, or another writing related to a potential agreement with the District.

This Conflict of Interest Questionnaire must be filed annually by September 1 as long as the person or the agent of the person continues to contract or seek to contract for the sale or purchase of property, goods, or services with the District or not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.

The completion of the Conflict of Interest Questionnaire is not needed if the person is an employee of a governmental entity and is acting in the employee's official capacity.

Explanation of the Conflict of Interest Questionnaire

1. Name of person doing business with the District.
2. Check the box if you are filing an update to a previously filed questionnaire.
3. Describe each affiliation or business relationship with an employee or contractor of the District who makes recommendations to a District officer with respect to expenditure of money. **If no affiliation or business relationship exists, state "NONE."**

Examples:

If your spouse, parent, or child is the District's Director of Purchasing and a bid is being submitted to the Purchasing Department, this relationship must be reported.

If your spouse, parent, or child is the Principal at a School and your business may sell items directly to that school, this relationship must be reported.

If you or your spouse, parent, or child is in business with a District employee that would be making a recommendation concerning a purchase or sales transaction involving you, the relationship must be reported.

If you employ or do business with a spouse, parent, or child of a District employee that would be making a recommendation concerning a purchase or sales transaction involving you, the relationship must be reported.

If you are a District employee and would be making a recommendation concerning a purchase or sales transaction involving you, the relationship must be reported.

If your spouse, parent, or child is a teacher that does not make recommendations concerning purchasing or sales transactions, this relationship should not be reported.

If your spouse, parent, or child is a Principal at a School and a bid is being considered by a separate department such as Facilities Planning (Construction Department), this relationship should not be reported.

4. Describe each affiliation or business relationship with a person who is a District officer and who appoints or employs a District officer that is the subject of this questionnaire. **If no affiliation or business relationship exists, state "NONE."**

NOTE: THE FOLLOWING DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

5. Example:

If you or your spouse, parent, or child is related to, employs, or is in business with a District officer or their spouse, parent, or child, this relationship must be reported.

6. Name of District officer with whom you have an affiliation or business relationship.

For each person listed under question #4, complete page 2. If answers to A, B, and C are NO, indicate the name of the District officer, but do not complete section D.

7. Describe any other affiliation or business relationship that might cause a conflict of interest.

Example:

If your neighbor or friend is a District employee that would be making a recommendation concerning a purchase or sales transaction involving you and you feel that your relationship with this employee could affect their recommendation, this relationship must be reported.

If any other situation exists that would result in a conflict of interest, the relationship must be reported.

7. Sign and date this form.

Submit the completed form to the District. If any disclosures are indicated under questions #3 or #4, the form will be posted on the District's website.

INSERT CONFLICT OF INTEREST QUESTIONNAIRE

NOTE: THE FOLLOWING DOCUMENT MUST BE EXECUTED AND SUBMITTED WITH PROPOSAL

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed;
- or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

- (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
- (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

- (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
- (B) that the vendor has given one or more gifts described by Subsection (a); or
- (C) of a family relationship with a local government officer.

DOCUMENT AL - CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER COVERED TRANSACTIONS

Per Title 34, Code of Federal Regulations, 80.35, "Grantees and subgrantees must not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."

(Before completing certification, read the instructions below.)

Please check one choice below:

The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

When the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

Name and Title of Authorized Representative

Signature

Date

Instructions For Suspension/Debarment Certification Statement

1. By signing and dating the certification statement, the bidder certifies that neither it nor any of its principals (e.g., key employees) has been proposed for debarment, debarred or suspended by a federal agency on the date signed.

2. The prospective bidder shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

3. Federal and State penalties exist for vendors and districts that knowingly enter into contracts with suspended/debarred persons.

NOTE: THIS DOCUMENT MUST BE SUBMITTED AT PROPOSAL OPENING

DOCUMENT BA - CONTRACT DOCUMENTS

I. CONSTRUCTION CONTRACT AGREEMENT

- A. The contract for the construction of the project shall be executed by the successful Offeror on the 2007 Edition of AIA Document A101 "Standard Form of Agreement Between Owner and Contractor." Said contract, fully executed, shall be delivered to the Owner within ten (10) days of receipt of said contract.

II. CONDITIONS OF THE CONTRACT

- A. The General Conditions of the Contract for Construction, AIA Document A201, 2007 Edition, is hereby specifically made a part of the Contract Documents, whether attached hereto or not; and as supplemented and amended herein, constitutes the General Conditions.
- B. Supplementary Conditions:
 - 1. The Supplementary Conditions contain modifications to the General Conditions of the Contract for Construction, AIA Document A201. Where any part of that document is modified by Supplementary Conditions, the unaltered provisions of the General Conditions shall remain in effect. Refer to Document CB for the Supplementary Conditions.

III. AVAILABILITY

- A. Printed copies of these documents may be examined in the Architect's office. A.I.A. Documents may be obtained from the Houston Chapter of the American Institute of Architects, 315 Capitol, Suite 120 Houston, Texas 77002; (713) 520-0155. Copies may also be obtained from local architects' supplies stores.
- B. Failure to obtain and examine these documents in no way relieves the Contractor, Subcontractors, Sub-subcontractors, and material suppliers of responsibilities incorporated in the Agreement.

END OF DOCUMENT BA

DOCUMENT BB - TEXAS STATUTORY PERFORMANCE BOND

Bond No.: _____
(Penalty of this bond must be 100% of contract amount)

KNOW ALL MEN BY THESE PRESENTS, that: _____
(hereinafter called the Principal), as principal, and _____
a corporation organized and existing under the laws of the State of _____
authorized and admitted to do business in the State of Texas and licensed by the State of Texas to
execute bonds as Surety (hereinafter called the Surety), as Surety, are held and firmly bound unto

(hereinafter called the Obligee) in the amount of _____

Dollars(\$ _____) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 2018, for:

**2018 REROOFING PACKAGE
SANTA FE INDEPENDENT SCHOOL DISTRICT**

which contract is hereby referred to and made a part hereof as fully and the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with the plans, specifications and contract documents, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 22.53 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this Instrument this _____ day of _____, 2018.

Principal (Seal)

Surety Address _____
By: _____

Surety (Seal)

Surety Telephone Number _____
By: _____
Attorney-in-Fact

DOCUMENT BC - TEXAS STATUTORY PAYMENT BOND

Bond No.: _____
(Penalty of this bond must be 100% of contract amount)

KNOW ALL MEN BY THESE PRESENTS, that:

_____ (hereinafter called the Principal), as principal, _____ a corporation organized and existing under the laws of the State of _____ authorized and admitted to do business in the State of Texas and licensed by the State of Texas to execute bonds as Surety (hereinafter called the Surety), as Surety, are held and firmly bound unto

_____ (hereinafter called the Obligee) in the amount of _____

_____ Dollars(\$_____) for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 2018, for:

**2018 REROOFING PACKAGE
SANTA FE INDEPENDENT SCHOOL DISTRICT**

which contract is hereby referred to and made a part hereof as fully and the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a Subcontractor in the prosecution of the work provided for in said contract, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 22.53 of the Texas Government Code and all liabilities on this bond to all such claimants shall be determined in accordance with the provisions of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this Instrument this day of _____, 2018.

(Seal)
Witness: _____
Principal

_____ By: _____

Witness:
(Seal) _____
Surety

_____ By: _____
Attorney-in-Fact

Surety Address

Surety Telephone Number



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General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

2018 Fall Reroof Package
Santa Fe Junior High School
4132 Warpash Ave
Santa Fe, Texas 77510

E.Y. Cowen Education Center
4133 Warpath Ave
Santa Fe, Texas 77510

THE OWNER:

(Name, legal status and address)

Santa Fe Independent School District
4133 Warpath
PO Box 370
Santa Fe, Texas 77510
Phone: 409-925-3526

THE ARCHITECT:

(Name, legal status and address)

PBK Architects
dba BEAM Professionals
11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
Phone: 713-940-3201

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 INITIAL DECISION MAKER

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants.

§ 1.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the

portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall

continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required

submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop

Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a

party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed.

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However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 SUBCONTRACTUAL RELATIONS

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 MINOR CHANGES IN THE WORK

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon

compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the

Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract

Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in

whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 INJURY OR DAMAGE TO PERSON OR PROPERTY

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 EMERGENCIES

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional

insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 LOSS OF USE INSURANCE

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

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§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be

sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

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§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 ARBITRATION

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 CONSOLIDATION OR JOINDER

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

Additions and Deletions Report for **AIA® Document A201™ – 2007**

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 19:32:27 on 06/21/2018.

PAGE 1

2018 Fall Reroof Package
Santa Fe Junior High School
4132 Warpash Ave
Santa Fe, Texas 77510

E.Y. Cowen Education Center
4133 Warpath Ave
Santa Fe, Texas 77510

...

(Name, legal status and address)
Santa Fe Independent School District
4133 Warpath
PO Box 370
Santa Fe, Texas 77510
Phone: 409-925-3526

...

(Name, legal status and address)
PBK Architects
dba BEAM Professionals
11 Greenway Plaza, 22nd Floor
Houston, Texas 77046
Phone: 713-940-3201

PAGE 2

SECTION CB - SUPPLEMENTARY CONDITIONS TO THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

Supplement AIA Document A201, 2007 Edition as follows:

ARTICLE 1 – GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

Delete text of Subparagraph 1.1.1 and substitute the following:

1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement), and consist of the Agreement, the Conditions of the Contract (General, Supplementary and other Conditions), Performance Bond, Labor and Material Payment Bond, Drawings, Specifications, all Addenda issued prior to execution of the Agreement and all Modifications thereto. A modification is (1) a written amendment signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as proposal requirements (advertisement or invitation to propose, Instructions to Offerors, sample forms, the Contractor's proposal or portions of Addenda relating to proposal requirements).

Add the following text to Subparagraph 1.1.3, THE WORK:

1.1.3 It also includes all supplies, skill, supervision, transportation services and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the contract and all other items of cost or value needed to produce, construct and fully complete the public work identified by the Contract Documents.

1.1.7 INSTRUMENTS OF SERVICE: Delete this paragraph in its entirety.

Add the following Subparagraphs:

1.1.9 DESCRIPTION OF PARTIES

The following definitions apply to parties named in the Contract Documents.

1. Owner: Santa Fe Independent School District
4133 Warpath Avenue
Santa Fe, Texas 77510
Phone: (409) 925-3526
Representative: Mr. Bob Atkins
2. Architects: BEAM Professionals, A PBK Company
11 Greenway Plaza 22nd Floor
Houston, Texas 77046
Phone: 713-965-0608 Fax: 713-961-4571

1.110 ADDENDA

Addenda are written or graphic instruments issued prior to the execution of the Contract, which modify or interpret the proposal documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Agreement is executed.

**1.1.11 APPROVED, APPROVED EQUAL, APPROVED EQUIVALENT, OR EQUAL
SUPPLEMENTARY CONDITIONS TO THE CONTRACT FOR CONSTRUCTION**

The terms Approved and Approved Equal relate to the substitution of materials, equipment or procedure approved in writing by the Architect prior to receipt of proposals.

1.1.12 ABBREVIATIONS

N.I.C. By Others; By Owner; Existing	Not in contract. Indicating work not to be done by this Contractor under this Agreement.
AIA	American Institute of Architects
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ASA	American Standards Association
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
FS	Federal Specification
NES	National Electrical Code
SPR	Simplified Practice Recommendation
UL	Underwriters Laboratories, Inc.

1.1.13 PROPOSAL DOCUMENTS

Proposal Documents consist of all documents bound into or referenced in the Project Manual, the Drawings, and Addenda related thereto. The Project Manual contains the Proposal Requirements, Sample Forms, Conditions of the Contract, the Specifications, and a list of Drawings, and Schedules, some of which are bound into the Project Manual (Other Drawings and Schedules are bound separately).

1.1.13 MISCELLANEOUS OTHER WORDS

Provide: Whenever the word "provide" is used in these documents, it shall mean the same as "furnish and install".

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Subparagraphs:

1.2.4 PRECEDENCE OF THE CONTRACT DOCUMENTS

The most recent issued Document takes precedence over previous issued forms of the same Document. The order of precedence is as follows with the highest authority listed first.

- .1 The AIA Document A121/CMc-2003 and these AIA Document A201-2007 General Conditions, along with the Supplementary Conditions thereto; then
- .2 The Addenda, with those of later date having precedence over those of an earlier date; then
- .3 Drawings, and Specifications shall have equal authority. Should these documents disagree in themselves, the Architect will select the appropriate method for performing the work at no additional increase in the Contract Cost.

1.2.5 RELATION OF SPECIFICATIONS AND DRAWINGS

The Drawings and Specifications are correlative and have equal authority and priority. Should they disagree in themselves, or with each other, base the proposals on the most expensive combination of quality and quantity of work indicated. The appropriate method of performing the Work, in the event of the above mentioned disagreements, will be made by the Architect.

1.2.6 OPTIONAL MATERIALS, BRANDS AND PROCESSES

When more than one is specified for a particular item of Work, the choice shall be the Contractor's. The final selection of color and pattern will be made from the range available within the option selected by the Contractor, unless the item is specified to match a specific color or sample furnished. Where particular items are specified only products of those named manufacturers are acceptable. Certain specified construction and equipment details may not be regularly included as part of the named manufacturer's standard catalog equipment but shall be provided by the manufacturer as required for the proper functioning of the equipment. Reasonable minor variations in equipment are expected and will be acceptable; however, indicated and specified performance and material requirements are minimum, and will be required in addition to standard accessories. The Architect reserves the right to determine the equality of equipment and materials that deviate from any of the indicated and specified requirements.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Delete the sixth sentence in Subparagraph 1.5.1 and substitute the following:

They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects.

Add Paragraph 1.7 and following Subparagraphs:

1.7 MISCELLANEOUS OTHER DEFINITIONS

1.7.1 ADDENDA, ADDENDUM

Documents issued by the Architect prior to execution of the Owner Contractor Agreement that modify or clarify the Proposal Documents. The addenda become a part of the Contract Documents

1.7.2 ALTERNATE PROPOSAL(S)

A separate amount stated on the Proposal Form which, if accepted by the Owner, will be added to or deducted from the Base Proposal. If accepted, the work that corresponds to the alternate proposal will become part of the Agreement between Owner and Contractor. Alternative proposals shall remain valid for a period of 60 indicated otherwise herein.

1.7.3 BASE PROPOSAL

The Contractor's proposal for the Work, not including any Alternatives.

1.7.4 CONTRACT TIME

The period of time which is established in the Contract Documents for Substantial Completion of the Work. This period of time is not subject to adjustment or extension without the written permission of the Owner.

1.7.5 DATE OF AGREEMENT

The date the Owner formally awards a Contract for Construction of the Work. This date will be inserted on the first page of the Agreement Between Owner and Contractor and shall be referenced in Performance Bond and Payment Bond forms. See also Date of Commencement of the Work.

1.7.6 DATE OF COMMENCEMENT OF THE WORK

The date that either (1) the fully executed Agreement Between Owner and contractor, or (2) a written Notice to Proceed is delivered to the Contractor. This date constitutes day zero ("0") of the stated Contract Time.

1.7.7 DATE OF FINAL COMPLETION

The end of construction. Refer Paragraph 9.10.

1.7.8 DATE OF SUBSTANTIAL COMPLETION

Refer Subparagraph 8.1.3 and Paragraph 9.8. **Contractor shall be Substantially Complete with all work by date stated on the Proposal Form.**

1.7.9 DAY

The following days are referenced in the documents:

- .1 Calendar Days: The days of the Gregorian Calendar. The Contract Time is established in Calendar Days and extensions of time granted for Regular Work Days lost, if any, will be converted to Calendar Days.
- .2 Holidays: The days officially recognized by the construction industry in this area as a holiday; normally limited to the observance days of New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and the day after, and Christmas Day.
- .3 Regular Work Days: All calendar days except holidays, Saturdays, and Sundays. Requests for extensions of time shall be requested on the basis of Regular Work Days, and those days, if approved; will be converted to calendar days by multiplying by a factor of one and four-tenths (1.4).
- .4 Anticipated Weather Days: **The Contractor will not be allowed extensions of time due to inclement weather.**
- .5 Weather Days: **The Contractor will not be allowed extensions of time due to inclement weather.**
- .6 Net Weather Days: **The Contractor will not be allowed extensions of time due to inclement weather.**

1.7.10 NOTICE TO PROCEED

A notice that may be given by the Owner to the Contractor that directs the Contractor to start the Work. It may also establish the Date of Commencement of the Work.

1.7.11 PUNCH LIST

A comprehensive list prepared by the Contractor prior to Substantial Completion to establish all items to be completed or corrected; this list may be supplemented by the Architect or Owner. Refer to Subparagraph 9.8.2.

ARTICLE 2 - OWNER

Article 2.1 GENERAL

Delete the text of subparagraph 2.1.1 in its entirety and substitute the following:

- 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. All parties understand that only the Board of Trustees for the Owner acting as a body corporate has the authority to bind the Owner with respect to all matters requiring the Board's approval under Santa Fe ISD Board Policy, including, but not limited to,

Change Orders. Except as otherwise provided in subparagraph 4.2.1, the Architect does not have such authority to bind the Owner with respect to matters requiring the Owner's approval or authorization. The term "Owner" means the Owner or the Owner's authorized representative.

Delete the text of subparagraph 2.1.2 in its entirety.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

Add the following to paragraph 2.2.3:

- 2.2.3** In no event is this Owner liable or responsible in any way to Contractor for work performed in reliance on geo-technical or other subsurface information provided by Owner. Furthermore, Owner does not warrant the accuracy of any geo-technical or sub-surface data acquired by Owner for Owner's purposes and used by Contractor in performing the Work.

Delete text of Subparagraph 2.2.5 in its entirety and substitute the following:

- 2.2.5** The Contractor will be furnished free of charge, 15 copies of the Drawings and Specifications for the execution of the work. The Contractor shall pay actual reproduction costs of any additional copies required.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

Delete text of Subparagraph 2.4 in its entirety and substitute the following:

If the Contractor defaults or neglects to carry out the work in accordance with the Contract Documents and fails, after receipt of written notice from the Owner, to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the contractor the cost of correcting such deficiencies, including compensation for the Architect's additional services and expenses made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

Add the following paragraph:

2.5 OWNER'S RIGHT TO OCCUPY THE PROJECT

- 2.5.1** The Owner shall have the right to occupy or use without prejudice to the right of either party, any completed or largely completed portions of the project, notwithstanding the time for completing the entire work or such portions may not have expired. Such occupancy and use shall not constitute acceptance of any work not in accordance with the Contract Documents.
- 2.5.2** If such prior use delays the completion of the project, the Contractor shall be entitled to extension of time, which claim shall be in writing with supporting data attached.
- 2.5.3** Refer to Article 11 - Insurance and Bonds regarding property insurance requirements in the event of such occupancy.

ARTICLE 3 - CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Delete text of Subparagraph 3.2.2 in its entirety and substitute the following:

- 3.2.2** The Contractor shall carefully study and compare the Agreement, Conditions of the Contract, Drawings, Specifications, Addenda, and Modifications and shall at once report to the Architect any error, inconsistency, or omission he may discover. Contractor shall be liable for any damage to Owner for failure to report any error, inconsistency or omission he may discover or should have discovered, but he shall not be liable to Owner or Architect for any damage resulting from such error, inconsistency or omission which he should not have discovered or which he did discover and at once so reported. Contractor shall do no work without approved Drawings and Specifications.

Add the following Subparagraphs:

- 3.2.5** The Contractor shall not be entitled to additional compensation for the "rework portion" of any additional work caused by his failure to carefully study and compare the contract documents prior to execution of the Work.
- 3.2.6** The Contractor shall make a reasonable attempt to interpret the Contract Documents before asking the Architect for assistance in interpretation. The Contractor shall not ask the Architect for observation of work prior to the Contractor's field superintendent's personal inspection of the work and his determination that the work complies with the Contract Documents. The Contractor shall arrange meetings prior to commencement of the work of all major subcontractors to allow the subcontractor to demonstrate his understanding of the documents to the Architect and to allow the subcontractor to ask for any interpretation he may require.
- 3.2.7** If, in the opinion of the architect, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or his Consultants to expend an unreasonable amount of time in the discharge of the duties imposed on him by the contract Documents, then the Contractor shall bear the cost of compensation for the Architect's additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to above requirements before additional services are performed.
- 3.2.8** If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor his Warranty, he shall promptly notify the Architect in writing, providing substantiation for his position. Any necessary changes, including substitution of materials, shall be accomplished by appropriate Modification.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Delete the text of subparagraph 3.3.1 in its entirety and substitute the following:

- 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skills and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the job site safety thereof and, except as stated below, shall be fully and solely responsible for the job site safety of such means, methods, techniques, sequences or procedures. If the Contractor determines such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage, but only to the

extent the Owner would be responsible for any such losses or damages under state and/or federal law.

Add the following Subparagraph:

- 3.3.4** The Contractor is especially cautioned to coordinate the routing of mechanical and electrical items prior to commencing these operations.

3.4 LABOR AND MATERIALS

Add the following Section 3.4.4:

- 3.4.4** The Contractor shall disclose the existence and extent of any financial interests, whether direct or indirect, such Contractor may have in any Subcontractor or material supplier which the Contractor may propose for this Project.

3.5 WARRANTY

Add the following Subparagraphs:

- 3.5.2** In the event of failure of materials, products, or workmanship, either during construction or the warranty period (which shall be one (1) year from the Date of Substantial Completion, except where a longer period is specified), the Contractor shall take appropriate measures to assure correction or replacement of the defective items, whether notified by the Owner or Architect. Items of work first performed after Substantial Completion shall have their warranties extended by the period of time between Substantial Completion and the actual performance of the Work.

- 3.5.3** Refer to warranty forms included under Section 01710 Closeout Procedures, which will be required prior to final payment.

- 3.5.4** Approximately 11 months after Substantial Completion, the Contractor shall accompany the Owner and Architect on a complete reinspection of the Project and be responsible for correcting of any additional deficiencies observed or reported.

3.6 TAXES

Delete text of Subparagraph 3.6 in its entirety and substitute the following:

The Owner is exempt from the Texas Sales Tax on any purchase of tangible personal property and will issue Certificates of Exemption from the Texas Sales Tax on materials furnished by Contractors on School Construction projects. The Contractor shall give a written statement to the Owner (with a copy to the Architect) as to the proration of costs of skilled crafts, labor and materials for the project prior to awarding of a Construction Contract. The contractors shall obtain Certificates of Resale from their suppliers in order to avoid payment of the State Sales Tax on materials incorporated in School jobs. Failure of the Contractor to obtain Certificates of Resale from their suppliers shall make the Contractor responsible for absorbing the tax.

3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

- 3.7.1** Supplement Subparagraph 3.7.1, as follows:

3.7.1.1 The contractor shall pay directly all temporary and permanent utility charges, tap charges and water meter charges except for temporary electrical service from owner's existing service. Contractor will pay for temporary electrical service until power is connected to new facility. Contractor to pay for electrical service at new facility until substantial completion. The contractor shall secure and pay all governing authorities fees.

Delete text of Subparagraphs 3.7.3 in its entirety and substitute the following:

3.7.3 It is not the Contractor's responsibility to ascertain that the contract Documents are in accordance with Applicable laws, statutes ordinances, building codes, and rules and regulations. However, if the Contractor observes, or should have observed, that portions of the Contract Documents are to variance therewith, the Contractor shall promptly notify the Architect and Owner in writing and necessary changes shall be accomplished by appropriate Modification.

3.7.3.1 If the Contractor performs Work which he knew or should have known to be contrary to applicable laws, statues, ordinances, building codes, local rules or regulations, without such notice to the Architect and Owner, the Contractor shall assume full responsibility for such Work and shall bear their attributable costs.

3.7.4 Delete the number "21" wherever it appears in Subparagraph 3.7.4 and substitute the number "90":

3.8 ALLOWANCES

Delete text of Subparagraph 3.8.1 in its entirety and substitute the following:

3.8.1 The General Contractor shall include in his proposal the allowances stated in the Specifications. These stated allowances represent the cost estimate of the materials and equipment delivered and unloaded at the site. The Contractor's handling costs on site, overhead, profit, and other expenses contemplated for the allowance material and equipment shall be included in allowance only where called for in the various sections of these specifications.

The Contractor shall purchase the allowance materials and equipment as directed by the Architect on the basis of the lowest responsible proposal of at least three (3) competitive proposals. If the actual cost of the materials and equipment delivered and unloaded at the site is more or less than all the allowance estimates, the Contract Sum will be adjusted accordingly by Change Order.

3.9 SUPERINTENDENT

Delete text of Subparagraph 3.9.1 in its entirety and substitute the following:

3.9.1 Prime Contractor shall employ competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of the work. The Superintendent shall be satisfactory to the Owner and shall not be changed except with the consent of the Architect, unless the Superintendent leaves the employment of the Contractor. No increase in Contract Time or Contract Sum shall be allowed in the event the Owner or Architects objects to any nominated superintendent.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

Add the following Subparagraph:

3.10.4 The Contractor shall submit to the Architect with each monthly Application for Payment, a copy of the progress schedule showing all modifications required to have the schedule reflect appropriate revisions and shall take whatever action is necessary to assure that the project completion schedule is met.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

Add the following Subparagraphs:

3.12.11 The Contractor shall submit complete drawings, data and samples to the Architect at least 30 days prior to the date the Contractor needs the reviewed submittals returned. The Contractor shall be prepared to submit color samples on any key items (such as quarry tile, vinyl wall covering, etc.) within 30 days of the award of Contract. Once samples of all key items are received, the Architect will finalize color selections.

3.12.12 The Contractor shall 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. Where shop drawings are involved, submit one (1) high quality reproducible transparency and one (1) opaque print of the shop drawing for the Architect plus one (1) additional opaque print for each of the Architect's consultants involved with the particular Section of Work. The reproducible transparency will be marked by the Architect and/or his consultants. After final review and correction of the submittal, the Contractor shall send one (1) corrected set to the Architect and one (1) to each of the Architect's consultants involved with the particular Section of Work.

3.12.13 The Contractor shall provide composite drawings within three (3) months of contract signing showing how all piping, ductwork, lights, conduit, equipment, etc. will fit into the ceiling space allotted, including clearances required by the manufacturer, by Code, or in keeping with good construction practice. Space for all trade elements must be considered on the same drawing. Drawings shall be at 1/4 inch per foot minimum scale and shall include invert elevations and sections required to meet intended purpose.

3.15 CLEANING UP

Add the following Subparagraph:

3.15.3 Prior to the Architect's inspection for Substantial Completion, the Contractor shall remove all stains, foreign materials, debris, etc. from the paved surfaces.

Add the following paragraph:

3.18 INDEMNIFICATION

Delete the text of subparagraph 3.18.1 in its entirety and substitute the following:

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with paragraph 11.3, the Contractor shall indemnify and hold harmless the Owner and its agents and employees from and against claims, damages, losses and expenses, including but not limited to, attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease, or death, or injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to the party or persons described in this paragraph 3.18.

Add the following paragraphs:

3.19 REPRODUCIBLE RECORD DRAWINGS

3.19.1 At the completion of the project the Contractor shall submit one (1) complete set of mylar sepias and three (3) sets of blueline prints of these mylars that have been changed to show all changes made during construction including all change orders, substitutions and all concealed mechanical, electrical and plumbing items. Drafting shall be of comparable quality as the original drawing and the Contractor shall pay the cost of printing the mylars and prints and the cost of the required drafting.

3.19.2 The Contractor shall also provide the Owner with one (1) set of approved Record Drawings scanned on a non-rewritable CD in TIFF format. The record drawings shall be 100% complete prior to delivery to the Architect for review. The record documents must be delivered to the Architect thirty (30) days prior to receipt of the Contractor's Final Application for Payment. The record drawings shall exclude the seal of the Architect and/or Engineer and shall have a statement added to indicate the purpose of the drawings (i.e., "RECORD DRAWING").

3.20 PREVAILING WAGE RATES

3.20.1 No employee used in this construction may be paid less than the minimum wage rate provided herein in Article 16.

3.21 ANTITRUST VIOLATIONS

3.21.1 To permit the Owner to recover damages suffered; in antitrust violations, the Owner/Contractor Agreement shall contract which are under the antitrust laws of the United States, 15 U.S.C.A., Sec. 1 et. seq. (1973)". The Contractor shall include this provision in his agreements with each subcontractor and supplier. Each subcontractor shall include such provisions in agreements with sub-subcontractors and suppliers.

Add the following Section 3.22:

3.22 THIRD-PARTY BENEFICIARY

3.22.1 No person or entity shall be deemed to be a third-party beneficiary of any provision(s) of this Contract; nor shall any provision(s) hereof be interpreted to create a right of action or otherwise permit anyone not a signatory party to the Contract to maintain an action for personal injury or property damage.

ARTICLE 4 - ARCHITECT

4.1.3 Delete the word "shall" from Subparagraph 4.1.3 and substitute the word "may":

4.2 ADMINISTRATION OF THE CONTRACT

Delete the text of Subparagraph 4.2.2 in its entirety and substitute the following:

4.2.2 The Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Architect will be required to make on-site inspections as necessary to keep the Owner informed of the progress of the Work and as necessary to guard the Owner against defects and deficiencies in the Work. The Architect will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

Add the following text to Subparagraph 4.2.3:

4.2.3 The Architect shall endeavor to guard the Owner against defects and deficiencies in the Work.

Delete the text of Subparagraph 4.2.5 in its entirety and substitute the following:

4.2.5 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

Delete text of Subparagraph 4.2.6 in its entirety and substitute the following:

4.2.6 The Architect will have authority to reject Work which does not conform to the Contract Documents. The Architect shall be required to promptly notify the Owner of any non-conforming Work and shall reject such non-conforming Work unless the Owner objects to the rejection in writing within twenty-four (24) hours of such notification. Whenever the Architect considers it necessary or advisable for implementation of the intent of the Contract Documents, the Architect will have authority to require

additional inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made reasonably and in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material an equipment suppliers, their agents or employees, or other persons performing portions of the Work **except when the Contractor's inability to perform the Work is a result of design flaw, error or omission.**

Delete text of Subparagraph 4.2.12 in its entirety and substitute the following:

- 4.2.12** Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered reasonably and in good faith.

Delete the text of Section 4.2.13 in its entirety and substitute the following:

- 4.2.13** All decisions on matters relating to aesthetic effect shall initially be made by the Architect; however, all such decisions are subject to the Owner's written approval.

ARTICLE 5 – SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete the text of subparagraphs 5.2.1, 5.2.2 and 5.2.3 in their entirety.

- 5.2.4** Delete the words "or Architect" from Subparagraph 5.2.4.

Add Subparagraphs 5.2.5 and 5.2.6 as follows:

- 5.2.5** The Contractor shall submit the list of proposed Subcontractors on AIA Document G805. The Contractor may obtain blank copies from the AIA (American Institute of Architects).
- 5.2.6** The Contractor is required to visit the site and completely familiarize himself with the existing conditions prior to the proposal. No additional increase in the Contract amount will be provided when existing or known conditions require a certain amount of work to comply with the intent of the Contract Documents.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

Delete the last sentence of Section 5.4.1 in its entirety and substitute the following:

"When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract, but only to the extent permitted by law."

Delete the last sentence of Section 5.4.3 in its entirety.

ARTICLE 7 - CHANGES IN THE WORK

7.1 CHANGES

Delete the text of subparagraph 7.1.2 in its entirety and substitute the following:

- 7.1.2** A Change Order shall be based on agreement among the Owner's Board of Trustees, Contractor, and Architect, except when the Contract balance is amended as a result of Owner's Right to Carry out the Work under subparagraph 2.4.1 or the Owner's assessment of liquidated damages as allowed by the Contract Documents. In such event, the Change Order is deemed approved by Contractor and Contractor's signature(s) are not required. Construction Change Directive requires agreement by the

Owner or the Owner's representative and Architect and may or may not be agreed to by the Contractor; an order for a minor change may be issued by the Architect alone.

7.2 CHANGE ORDERS

Add the following subparagraph, 7.2.2:

7.2.2 The cost or credit to the Owner resulting from a change in the work shall be determined in one or more of the ways listed below. The first method listed shall be used unless the Architect determines that the method is inappropriate, in which case another method shall be selected:

- A. By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Where additional work is involved, the lump sum shall represent the estimated cost of labor and materials plus markups to cover overhead and profit:
 - 01 To compensate the contractor or subcontractor actually performing a part of the work for the combined cost of overhead, profit, General Conditions, insurance and bonds, the performing party shall be entitled to a single markup not to exceed 10% of the estimated cost of that part of the work.
 - 02 To compensate the contractor for the combined cost of overhead, profit, General Conditions, insurance and bonds on work performed by subcontractors, the Contractor shall be entitled to a single markup not to exceed 10% of the subcontract amount.
 - 03 When a subcontractor performs the work of a change, the 10% markup for combined overhead, profit, General Conditions, insurance and bonds shall be used only by the sub-subcontractor. The Contractor and Subcontractor would each be entitled to a single markup not to exceed 10% of the cost to them for the Subcontractor and sub-subcontractor, respectively.
- B. By unit prices stated in the Contract Documents or subsequently agreed upon. Additional markups for overhead and profit will not be allowed in Unit Price work.
- C. By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

7.3 CONSTRUCTION CHANGE DIRECTIVES

Delete text of Subparagraph 7.3.3 in its entirety and substitute the following:

7.3.3 The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more ways listed below. The first method listed shall be used unless the Architect determines that the method is inappropriate, in which case another method shall be selected.

- .1 By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Where additional Work is involved, the lump sum shall represent the estimated cost of labor and materials plus markups to cover overhead, profit, General Conditions, insurance and bonds:

To compensate the Contractor or Subcontractor actually performing a part of the Work for the combined cost of overhead, profit, General Conditions, insurance and bonds, the performing party shall be entitled to a single markup not to exceed 10% of the estimated cost of that part of the Work.

To compensate the Contractor for the combined cost of overhead and profit on work performed by Subcontractors, the Contractor shall be entitled to a single markup not to exceed 10% of the subcontract amount.

When a Sub-subcontract performs the Work of a change, the 10% markup for combined overhead and profit shall be used only by the Sub-subcontractor. The Contractor and

Subcontractor would each be entitled to a single markup not to exceed 10% of the cost to them from the Subcontractor and Sub-subcontractor respectively.

- .2 By unit prices stated in the Contract Documents or subsequently agreed upon. Additional markups for overhead and profit will not be allowed in Unit Price Work.
- .3 By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.

Add the following Paragraph:

7.5 CHANGES FUNDED BY ALLOWANCES

7.5.1 Allowances balances may be used to fund changes in the work.

The Contractor will not be allowed an overhead and profit mark-up when changes in the work are funded by one of the Allowances.

ARTICLE 8 - TIME

8.1 DEFINITIONS

Delete text of Subparagraph 8.1.2 in its entirety and substitute the following:

8.1.2 Unless agreed otherwise, the date inserted on the Agreement form and the Date of Commencement of the Work shall be as follows:

- .1 The date inserted on the first page of the Agreement form will be the date the Owner formally awards the Contract. As soon as feasible after receipt of Proposals, the Architect will present Agreement forms to the Contractor for his review and signature; the Contractor will be allowed a maximum of five (5) days from the date the prepared Agreements are presented to him to 1) obtain the required bond forms and insurance certificates and 2) return the executed Agreement and supporting documents to the Architect for transmittal to the Owner for his final review and execution.
- .2 The Date of Commencement of the Work is the date that either (1) the fully executed Agreement of (2) a written Notice to Proceed is delivered to the Contractor and constitutes day "0" (zero) of the stated Completion Time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 Delete the text of Subparagraph 8.3.1 in its entirety.

Add the following Subparagraph:

8.3.4 The following is a requirement of the Contract and will be included in the Agreement Between Owner and Contractor under Time of Completion and the blank spaces will be completed indicating the completion date as stated on the Proposal Form.

Contractor shall be Substantially Complete with work by date stated on the Proposal Form.

The work to be performed under this Contract shall be commenced upon Notice to Proceed and be Substantially Complete by the date stated on the Proposal Form. The parties hereto agree that time is of the essence of this Contract and that the pecuniary damages which would be suffered by the Owner, if the Contractor does not complete all work called for in the Contract documents by the specified date, are in their very nature difficult of ascertainment. It is, therefore, expressly agreed as a part of the consideration inducing the Owner to execute this Contract that the Owner may deduct from the final payment made to the Contractor a sum equal to \$1,000.00 per calendar day, per campus, for each and

every day beyond the agreed date which the Contractor shall require for Substantial Completion of the work included in this Contract. It is expressly understood that the said sum per day is agreed upon as a fair estimate of the pecuniary damages which will be sustained by the Owner in the event that the work is not completed within the agreed time, or within the legally extended time, if any, otherwise provided for herein. Said sum shall be considered as liquidated damages only and in no sense shall be considered a penalty **or forfeiture**, said damage being caused by additional compensation to personnel, for loss of interest on money, inconvenience, disruption of the educational process, moving expenses and other miscellaneous increased costs, all of which are difficult of exact ascertainment.”

Failure to complete and close-out project 60 days after Substantial Completion may result in liquidated damages being assessed in the amount of \$100.00 per calendar day until close-out occurs. All close-outs must be reviewed and approved by Owner, Architect and/or Consultants prior to the 60 day deadline.

8.3.5 Add the following Paragraph:

Under the Base Proposal, the Contractor will **not** be allowed time extensions of any kind.

Add the following Paragraph:

8.4 LIQUIDATED DAMAGES

8.4.1 The wording in Subparagraph 8.4.2 will be modified to include the completion times proposed for this project and will be included in the Agreement Between Owner and Contractor under Time of Completion.

8.4.2 Add the following Subparagraph:

8.4.2 Under the Base Proposal, the Contractor will **not** be allowed time extensions of any kind.

Failure to complete and close-out project 60 days after Substantial Completion **may** result in liquidated damages being assessed in the amount of \$100.00 per calendar day until close-out occurs.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add Subparagraph 9.2.2 as follows:

9.2.2 In order to facilitate the review of Applications for Payment, the Schedule of Values shall be submitted on AIA Documents G702 and G703 or other similar forms approved by the Owner, and shall include the following:

- .1 General Contractor's costs for Contractor's fee, bonds and insurance, mobilization, etc., shall be listed as individual line items.
- .2 Contractor's costs for various construction items shall be detailed. For example, concrete Work shall be subdivided into footings, grade beams, floor slabs, paving, etc. These subdivisions shall appear as individual line items.
- .3 On major subcontracts, such as mechanical, electrical and plumbing, the schedule shall indicate line items and amounts in detail (for example; underground, major equipment, fixtures, installation of fixtures, start up, etc.)
- .4 Costs for subcontract Work shall be listed without any additional of General Contractor's costs for overhead, profit or supervisions.
- .5 Where payment for stored materials may be requested prior to installation, material and labor shall be listed as separate line items.
- .6 Sample pages from an approved schedule of values are included following this document.

9.3 APPLICATIONS FOR PAYMENT

Delete Subparagraph 9.3.1 in its entirety and substitute the following:

- 9.3.1** At least ten (10) days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Prior to this submittal, the Contractor shall contact the Architect's Field Department for on-site review of the proposed application. Upon approval by the Architect's Field Department, the Application for Payment shall be notarized and submitted to the Architect.

Included shall be data required to support the Contractor's right to payment as may be required by the Owner or Architect, such as copies of requisitions from subcontractors and material suppliers, and reflecting retainage, if provided for elsewhere in the Contract Documents.

Delete text of Subparagraph 9.3.2 in its entirety and substitute the following:

- 9.3.2** Payments will be made on account of materials or equipment (1) incorporated in the Work and (2) Suitably stored at the site or (3) suitably stored at some off-site location provided the following conditions are met for off-site storage:

- .1 The location must be agreed to, in writing, by the Owner and Surety.
- .2 The location must be a bonded warehouse.
- .3 Surety must agree, in writing, to each request for payment.
- .4 The Contractor must bear the cost of the Owner's and Architect's expenses related to visiting the off-site storage area.

Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of bills of sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance (naming the Owner as insured) and transportation to the site for those materials and equipment stored off the site. Under no circumstances will the Owner reimburse the Contractor for down payments, deposits, or other advance payments for materials or equipment.

The Contractor acknowledges that the review of materials stored off site is an additional service of the Architect and shall be charged for that service. The cost for that service will be established by the Architect and is not subject to appeal.

Add the following Subparagraph:

- 9.3.4** Contractors shall submit application in quadruplicate using AIA Document G702 and G703, Application and Certificate for Payment, 1992 Edition. All blanks in the form must be completed and signatures of Contractor and Notary Public must be original on each form.

9.4 CERTIFICATES FOR PAYMENT

Add the following Subparagraph:

- 9.4.3** The Architect will affix his signature to the same form described in Paragraph 9.3.4 to signify his certification of payment provided the application is otherwise satisfactory.

9.6 PROGRESS PAYMENTS

Add the following Subparagraph:

- 9.6.8** Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided in the conditions of the Contract as follows:

On or about the 15th day of each month 95% of the proportion of the Contract Sum properly allocable to labor, materials and equipment incorporated in the Work and 95% of the portion of

the Contract Sum properly allocable to materials and equipment suitably stored at the site or at some other location agreed upon in writing by the parties, up to the first (1st) day of that month; less the aggregate of previous payments in each case; and upon Substantial Completion of the entire work, a sum sufficient to increase the total payments to 95% of the Contract Sum less such retainages as the Architect shall determine for all incomplete work and unsettled claims.

9.7 FAILURE OF PAYMENT

Delete the following text from the subparagraph 9.7.1:

9.7.1 "or awarded by binding dispute resolution"

9.8 SUBSTANTIAL COMPLETION

9.8.1 Add the following:

The following items are a partial list of requirements, as applicable to the Project, that must be completed prior to established Substantial Completion.

- 01 All fire alarm system components must be completed and demonstrated to the Owner.
- 02 Local fire marshal approval certificate must be delivered to the Owner.
- 03 All exterior clean-up and landscaping must be complete.
- 04 All final interior clean-up must be complete.
- 05 All HVAC air and water balancing must be complete.
- 06 All Energy Management Systems must be complete and fully operational and demonstrated to the Owner.
- 07 All communications equipment, telephone system, and P.A. systems must be complete and demonstrated to the Owner.
- 08 All final lockset cores must be installed and all final Owner directed keying completed.
- 09 All room plaques and exterior signage must be completed.
- 10 All Owner demonstrations must be completed including kitchen equipment, HVAC equipment, plumbing equipment, and electrical equipment.
- 11 A final certificate of occupancy must be signed by the Contractor and delivered to the Owner.
- 12 All operation and maintenance manuals are delivered and approved ("D-slant" ring binders in triplicate).

9.10 FINAL COMPLETION AND FINAL PAYMENT

At Subparagraph 9.10.2, modify as follows:

- .1 On line 9, delete the phrase "if any".
- .2 On line 10, delete the phrase "If required by the Owner".

Add the following to Subparagraph 9.10.2:

Prior to final payment, the Contractor shall submit in triplicate to the Architect the following completed forms:

- 01 Contractor's Affidavit of Payment of Debts and Claims, AIA Document G706.
- 02 Contractor's Affidavit of Release of Liens, AIA Document G706A.
- 03 Consent of Surety to Final Payment, AIA Document G707.
- 04 General Contractor's Guarantee - notarized
- 05 Subcontractor's Guarantee - notarized
- 06 Subcontractor's Lien Releases - signatures and notary seal on the same piece of paper.
- 07 Each Offeror (and subcontractor and supplier submitting a proposal to an Offeror) shall submit a notarized affidavit stating that no asbestos, PCB or lead, except for flashing in roofing, containing building materials were used.
- 08 Maintenance and inspection manuals. Three (3) sets of each bound in a 3 inch "D-slant" ring binder.

- 09 Record drawings. Refer to Section 01710, Closeout Procedures
- 10 Final list of subcontractors (Refer to Document AF).

Documents identified as affidavit must be notarized. All manuals will contain an index listing the information submitted. The index sections will be divided and identified by tabbing each section as listed in the index.

The Contractor may obtain blank copies of the forms listed above from the AIA. Final payment, constituting the entire unpaid balance of the Contract Sum shall be paid by the Owner to the Contractor 60 days after substantial completion of the work unless otherwise stipulated in the Certificate of Completion, the contract fully performed, and Final Certificate of Payment has been issued by the Architect.

The Owner may accept certain portions of the work as being complete prior to the acceptance of the entire project. If certain areas are accepted by the Owner as being complete, and if the Contractor has completed all of the requirements for final payment of that portion of work, then the Owner may release retainage for that area/portion of work. Amounts of retainage shall be agreed upon by both Owner and Contractor prior to final acceptance of these areas.

Refer to Section 01710, Closeout Procedures for additional requirements.

- 9.10.4** Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.2.8 Injury or Damage to Person or Property

Delete the text of subparagraph 10.2.8 in its entirety.

Add the following subparagraphs 10.2.9 and 10.2.10 as follows:

- 10.2.9** The performance of the foregoing services by the Construction Manager shall not relieve the Subcontractors of their responsibilities for the safety of persons and property and for compliance with all applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to the conduct of the Work.

- 10.2.10** The Construction Manager shall be responsible for taking all precautions necessary to protect the Work in place from any foreseeable weather conditions which could cause any potential damage to portions or all Work in place. The Construction Manager shall be responsible for performing all repairs and/or replacement of any Work that results from foreseeable weather conditions.

10.3 HAZARDOUS MATERIALS

Delete text of Subparagraph 10.3.2 in its entirety and substitute the following:

- 10.3.2** The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable

additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provide in Article 7.

Delete text of Subparagraphs 10.3.3, 10.3.4 and 1.3.5

Add the following Paragraph:

10.5 ASBESTOS, LEAD OR PCBs CONTAINING MATERIALS

10.5.1 The contractor and each subcontractor, prior to final payment, shall submit a notarized statement on their letterhead certifying "to the best of their information, knowledge, and belief asbestos, asbestos containing materials, and PCBs have not been used or incorporated into the Work and lead or lead bearing materials have not been incorporated into potable water systems." For the purpose of definition as used in this statement, the term "potable water systems" includes, but is not limited to, those water systems for drinking fountains, all sinks, showers, bath tubs, residential and commercial kitchen equipment, ice machines, and hose bibbs, as applicable to the project. The Contractor shall also obtain such statements from Subcontractors and all such statements shall be notarized.

ARTICLE 11 - INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 At Subparagraph 11.1.1, add the following clauses:

11.1.1.9 Liability insurance shall include all major divisions of coverage and is on an occurrence basis including:

- 01 Premises operations (including X, C, and U coverages).
- 02 Independent Contractors' Protective.
- 03 Products and completed Operations.
- 04 Personal Injury Liability with Employment Exclusion deleted.
- 05 Contractual, including specified provisions for Contractor obligation under Paragraph 3.18.
- 06 Owned, non-owned and hired motor vehicles.
- 07 Broad Form Property Damage including Completed Operations

11.1.2 At Subparagraph 11.1.2, add the following:

The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits, or greater if required by law:

- .1 Workers' Compensation:
 - (a) State: Texas – Statutory (Per figure 1:28 TAC 110-110(c)(7).
 - (b) Applicable Federal: Statutory
 - (c) Employer's Liability:
 - \$1,000,000 per Accident
 - \$1,000,000 per Disease, Policy Limit
 - \$1,000,000 per Disease, Ea. Employee
 - (d) Provision shall be included for Waiver of Subrogation against Owner, Architect and his Consultants.
- .2 Commercial General Liability (including Contractual Liability; Personal Injury; Premises-Operations; Independent Contractors' Protective: Products and Completed Operations; Broad Form Coverage):
 - (a) Bodily Injury and Property Damage Combined and Errors and Omissions:
 - \$1,000,000 Each Occurrence
 - \$2,000,000 Aggregate
 - (b) Products and Completed Operations shall be maintained for at least two years after Substantial Completion and certificates shall be filed annually with the Owner during this period of time:
 - \$2,000,000

- (c) Property Damage Liability Insurance shall provide X, C and U coverage.
 - (d) Broad Form Property Damage Coverage shall include Completed Operations.
 - (e) \$1,000,000 Personal Injury with Employment Exclusions deleted.
 - (f) The Owner shall be an additional insured on the Contractor's policy as to the subject job.
 - (g) Provision shall be included for Waiver of Subrogation against Owner, Architect and his Consultants.
 - (h) Such policy shall include all of the coverages which may be included in coverages A, B and C contained in the Standard Texas Form Commercial General Liability Policy, without deletion. Such policy must be issued upon an "occurrence," as distinguished from a "claims made," basis and shall be continued for a period of one (1) year after the completion of the Services for the Project.
- .3 Business Auto Liability (including owned, non-owned and hired vehicles):
- (a) Bodily Injury and Property Damaged combined:
\$1,000,000 Each Occurrence
 - (b) The Owner shall be an additional insured on the Contractor's policy as to the subject job.
 - (c) Provision shall be included for Waiver of Subrogation against Owner, Architect and his Consultants.
- .4 Umbrella Liability Insurance:
- (a) Limits: \$3,000,000 Aggregate
 - (b) The Owner shall be an additional insured on the Contractor's policy as to the subject job.
 - (c) This shall provide coverage over the workman's compensation, comprehensive general liability and comprehensive automobile liability (covering all owned, non-owned and hired automobiles).
 - (d) Provision shall be included for Waiver of Subrogation against Owner, Architect and his Consultants.

INSURANCE MANAGEMENT - INSURANCE AND BONDS

GENERAL

The District shall require that the following insurance requirements be met on public works contracts:

1. No work will be commenced until all requirements of this section have been approved by the District in writing.
2. The insurance shall contain a provision that at least 30 days prior written notice shall be given to the District in the event of cancellation, material change or non-renewal.
3. Insurance shall be underwritten by a company rated not less than A+VI in the "Best's" latest published guide.
4. There shall be a hold harmless agreement in which the contractor assumes liability on the contract and holds the School District harmless.
5. The contractor shall purchase and maintain in force the following kinds of insurance and bonds for operations under construction contracts and as specified in each section.
6. This project is located in a Tier 1 county (Galveston), it is considered a "HIGH HAZARD" area. Selected Offeror to provide insurance coverage against damages caused by "NAMED STORM" events, such as tropical storms and hurricanes, as well as any related effects of this named storm such as tornadoes. This is not the same as the TX WINDSTORM CERTIFICATION INSPECTIONS. It is a policy to guard against damage caused by a named storm during the construction process.

CASUALTY INSURANCE

1. Worker's Compensation Insurance Coverage

Definitions:

Certificate of coverage ("Certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in Texas Labor Code 406.096) - includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity that furnishes persons to provide services on the project. "Services" shall include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- 01 The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code 401.011 (44) for all employees of the contractor providing services on the project for the duration of the project.
- 02 The contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- 03 If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing the coverage has been extended.
- 04 The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 - a. a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on a project; and
 - b. no later than seven (7) days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- 05 The contractor shall retain all required certificates of coverage for the duration of the project and one year thereafter.
- 06 The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- 07 The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- 08 The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
 - a. provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all of its employees providing services on the project, for the duration of the project;
 - b. provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of

- the project; provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- c. obtain from each other person with whom it contracts, and provide to the contractor:
 - 1) a certificate of coverage, prior to the other person beginning work on the project; and
 - 2) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
 - e. retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - f. notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provisions of coverage of any person providing services on the project; and
 - g. contractually require each person with whom it contracts to perform as required by paragraphs a - g, with the certificates of coverage to be provided to the person for whom they are providing services.
- 09 By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- 10 The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.
- 11 The Contractor shall post the following language:

REQUIRED WORKERS' COMPENSATION COVERAGE

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512 - 440 - 3789 to receive information on the legal requirements for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

OWNERS AND CONTRACTORS PROTECTIVE LIABILITY

Owners and Contractors Protective Liability Insurance

1. Naming the Owner as insured with the following limits: \$1,000,000.00 each occurrence, \$2,000,000.00 aggregate as primary limits, irrespective of whether occurrence consists of bodily injury, death, property damage or combination thereof.
2. Covering the work to be performed for Owner by the contractor and its subcontractor, if any. It will be necessary that the Contractor and the subcontractor, if any, be designated in the Declarations of the policy.

3. The definition of insured in the policy shall be endorsed to include officers, employees of the Santa Fe Independent School District, with respect to the work performed by the contractor.
4. Written with same company as CGL policy.
5. The architects and engineers shall be additional insured but only will have excess coverage. The full policy limits will protect the school district if need and only the excess will protect the architects and engineers.
6. Original policy to be placed on file with Santa Fe Independent School District.

BONDS

Bonds are required for public works contracts under the following circumstances:

1. Performance Bond and Labor and Material Payment Bond, each in a penal sum equal to the Project budget established by the Owner if the formal contract is in excess of \$25,000.00.
2. A Proposal Bond or Proposal Security in the amount of 10% of any proposal of \$25,000.00 or more must be submitted with formal proposals on public works contracts or as otherwise specified in each contract.
3. Copies of the bonds shall be filed with the county clerk and the owner shall receive a file receipt.
4. Performance and payment bonds shall remain in force for one (1) year after completion of the contract.
5. The work will not be started until the bonds and issuing companies have been accepted as satisfactory by the owner.
6. The original bonds will be delivered to the owner with an attached authorized power of attorney.

11.1.3 At Subparagraph 11.1.3, add the following sentence:

Proof of insurance shall be evidenced on an original Certificate of Insurance-Construction, AIA Document G705 (Modified) or ACORD Form 25-S, with an original signature of the Authorized Representative. Policy exclusions and/or restrictions should be clearly explained on the Certificate or in an attached letter from the issuing Agency. Blank areas on the Certificate should have "not covered" written across the printed areas when coverage is not provided.

Add the following Subparagraphs:

11.1.3.1 The Certificate of Insurance, AIA Document G705, 1987 Edition indicates the minimum Contractor's Insurance required. The Contractor is urged to carry such additional insurance as he may deem appropriate to provide protection from risks assumed under this contract. The Contractor shall fill in the blank spaces on this form and submit one copy each of the completed Certificate of Insurance forms to the Owner and Architect prior to commencement of the Work. The required insurance must be written by a Company licensed to do business in the State of Texas and be acceptable to the Owner.

11.1.5 Insurance shall be underwritten by a company rated not less than A-VI in Best's latest published guide and be acceptable to the Owner.

11.2 OWNER'S LIABILITY INSURANCE

Delete text of Subparagraph 11.2 and substitute the following:

The Contractor shall be responsible for purchasing and maintaining Owner Protective Liability insurance naming the Owner as insured with the stated limit to be per occurrence as primary limit (combined single limit, irrespective of whether occurrence consists of personal injury, death, property damage, or combination thereof). The policy shall cover the work to be performed for the Owner by the Contractor and all subcontractors. The definition of insured in the policy shall be endorsed to include officers, employees of the Owner, while acting within the scope of employment or function for the Owner with respect to the work performed by the Contractor; the project architect and his consultants as listed in the Proposal Documents shall also be included as additional insured. The policy shall be written with the same company as the Comprehensive General Liability policy.

Add the following subparagraph:

11.2.2 Refer to Subparagraph 11.1.3 for additional requirements that apply to this Subparagraph also.

11.3 PROPERTY INSURANCE

Delete text of Subparagraphs 11.4.1 through 11.4.10 in their entirety and substitute the following:

11.3.1 The contractor shall purchase and maintain, in a company or companies or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance in the amount of the initial Contract Sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis without voluntary deductibles. Such property insurance shall be maintained until final payment has been made as provided in Subparagraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Subparagraph 11.4 to be covered, whichever is earlier. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Work.

11.3.2 Property insurance shall be on an all-risk policy form and shall insure against the perils of fire and extended coverage and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, false work, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover loss. This insurance is not intended to cover machinery, tools or equipment owned or rented by the Contractor which are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment which shall be subject to the provisions of Subparagraph 11.4.7. Coverage for other perils shall not be required unless otherwise provided in the Contract Documents.

11.3.3 The property insurance shall include an endorsement allowing Owner occupancy and the insurance shall not be altered or canceled on account of partial occupancy prior to final completion.

11.3.4 If the property insurance requires minimum deductibles and such deductibles are identified in the Contract Documents, the Contractor shall pay costs not covered because of such deductibles.

11.3.5 This property insurance shall cover portions of the Work stored off the site after written approval of the Owner at the value established in the approval, and also portions of the Work in transit.

11.3.6 Before an exposure to loss may occur, the Contractor shall file with the Owner, a copy of each policy that includes insurance coverages required by this Subparagraph 11.4. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner.

11.3.7 A loss insured under Contractor's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insured, as their interests may appear. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in a similar manner.

11.3.8 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.

11.3.9 Delete third sentence in Subparagraph 11.4.9 and substitute the following:

The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach.

11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers.

11.4 PERFORMANCE BOND AND PAYMENT BOND

Delete Subparagraph 11.4.1 in its entirety and substitute the following:

11.4.1 The Owner requires the Contractor to furnish bonds covering full and faithful performance of the Contract and payment of obligations arising thereunder as stipulated by proposal requirements or specifically required in the Contract Documents on the date of execution of the Contract.

Add the following Subparagraphs:

11.4.3 The Performance Bond Form and Labor and Material Payment Bond Form shall be executed and submitted to the Architect in duplicate prior to commencement of the work. The bonding companies must be acceptable to the Owner.

11.4.4 Each bond shall be of penal sum equal to 100% of the Project budget established by the Owner and shall be compatible with the provisions of the governing authority. The Construction Manager shall deliver the bonds not later than the tenth (10th) day after the date the Contractor executes this Agreement unless the Contractor furnishes a bid bond or other financial security acceptable to the Owner to ensure that the Contractor will furnish the required performance and payment bonds when a guaranteed maximum price is established. The Contractor shall file copies of each bond with the county clerk and furnish the Owner with a file receipt. The bonds shall remain in force throughout the warranty period of the contract. The work will not be started until the bonds and issuing companies have been accepted as satisfactory by the Owner. The original bonds will be delivered to the Owner with an attached authorized power of attorney.

11.4.5 Claims must be sent to the Contractor and his Surety in accordance with Article 5160, Revised Civil Statutes or its successor statute. The Owner will furnish in accordance with such Article, a copy of the Payment Bond as provided therein to claimants upon request. All claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance's on notices sent to the Owner may result in loss of their rights against the Contractor and/or his Surety.

The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by any agent or employee. The Contractor indemnifies, defends and holds harmless the Owner, its employees and trustees from any liability relating to the claims and/or unpaid bills of subcontractors.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

Add the subparagraph 12.3.1.2

12.3.1.2 Owner's use and/or occupancy of any or all of the Project Site shall never be construed as an acceptance of Work not in conformance with Contract Documents. Owner reserves the right to enforce provisions of the Contract unless Owner's acceptance is provided to Contractor in writing.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

Delete Subparagraphs 13.1 and 13.1.1 in their entirety and substitute the following:

13.1 GOVERNING LAW

13.1.1 The Contract shall be governed by Texas Venue for any legal proceedings relating to this Contract or the Project shall lie in Brazoria County, Texas.

Delete the word "shall" in Subparagraph 13.2 and substitute the word "may"

13.3 WRITTEN NOTICE

Delete the text of subparagraph 13.3 in its entirety and substitute the following:

Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer at the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice, or if delivered by facsimile to the offices of the person or corporation for which it was intended. Facsimiles received after 5:00 p.m. on a business day, or on a weekend or legal holiday on which the recipient's offices are closed, notice shall be deemed to have been duly served on the next business day.

13.6 INTEREST

13.6.1 Delete the words "from time to time at the place where Project is located" from Subparagraph 13.6 and substitute the words "under Texas Law"

13.7 TIME LIMITS ON CLAIMS

Delete the text of paragraph 13.7 in its entirety.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.1.3 Delete the word "seven" from Subparagraph 14.1.3 and substitute the number "20" and delete the words "including reasonable overhead, profit and damages".

14.1.4 Delete the word "seven" from Subparagraph 14.1.4 and substitute the number "20".

14.2.2 Delete the word "seven" from Subparagraph 14.2.2 and substitute the number "20".

Add the following Subparagraph:

14.2.5 Contractor hereby assigns the Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 U.S.C.A. Section 1 ET.SEQ. (1973).

14.4 SUSPENSION BY THE OWNER FOR CONVENIENCE

Delete the text of subparagraph 14.4.3 in its entirety and substitute the following:

14.4.3 In the case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed up to the effective date of the notice of termination.

ARTICLE 15 – CLAIM AND DISPUTES

CLAIMS AND DISPUTES

Delete the text of Subparagraph 15.1.2 in its entirety and substitute the following:

15.1.2 Notice on Claims. Claims by either party must be made within 90 days after occurrence of the event giving rise to such Claim or within 90 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice to the Architect and the other party, with a copy to the Architect.

15.1.3 Continuing Contract Performance. Pending final resolution of a Claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract.

Delete the text of subparagraph 15.1.5.2 in its entirety.

15.1.6 Claims for Consequential Damages

Delete the text of subparagraph 15.1.6 in its entirety.

15.2 INITIAL DECISION

Delete all references to mandatory mediation in subparagraph 15.2.1

Delete the text of subparagraph 15.2.5 in its entirety and substitute the following:

15.2.5 The Architect will approve or reject claims by written decision, which shall state the reasons therefore and which shall notify the parties of any change in a Contract Sum or Contract Time or both. The approval or rejection of a claim by the Architect shall be final and binding on the parties, but subject to mediation if the parties so agree, and subject to legal or equitable proceedings in a court having jurisdiction thereof.

Delete the text of Sections 15.2.6 and 15.2.6.1 in their entirety.

15.3 MEDIATION

Delete the text of subparagraph 15.3.1 in its entirety.

Delete the text of subparagraph 15.3.2 in its entirety.

Delete the text of subparagraph 15.3.3 in its entirety and substitute the following:

15.3.3 If the parties to a dispute arising out of or related to the Contract agree to submit the claim to mediation following a decision by the Architect, the parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof. Nothing in the Contract Documents shall be construed as requiring mandatory mediation prior to litigation. The prevailing party in any judicial proceeding arising from this Agreement shall recover its reasonable and necessary attorneys fees pursuant to Section 271.159 of the Texas Local Government Code.

15.4 ARBITRATION

Delete the text of subparagraphs 15.4.1 through 15.4.6 in their entirety.

Add the following Article:

ARTICLE 16 - LABOR STANDARDS

16.1 PREVAILING WAGE RATES

16.1.1 Contractor and each Subcontractor shall pay to all laborers, workmen, and mechanics employed in execution of this Contract not less than rates set forth by law and as noted in the following Wage Rate Scale, for each craft or type of workman or mechanic needed to execute Contract.

16.1.2 Determination of prevailing wages shall not be construed to prohibit payment of more than rates named.

End of Document

DOCUMENT 00 73 00 - PREVAILING WAGE RATE DETERMINATION INFORMATION

*The following information is from Chapter 2258 Texas Government Code:
Effective 1 March 2016*

2258.021. Right to be Paid Prevailing Wage Rates.

- (a) A worker employed on a public work by or on behalf of the state or a political subdivision of the state shall be paid:
 - (1) not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed; and
 - (2) not less than the general prevailing rate of per diem wages for legal holiday and overtime work.
- (b) Subsection (a) does not apply to maintenance work.
- (c) A worker is employed on a public work for the purposes of this section if the worker is employed by a contractor or subcontractor in the execution of a contract for the public work with the state, a political subdivision of the state, or any officer or public body of the state or a political subdivision of the state.

2258.023. Prevailing Wage Rates to be Paid by Contractor and Subcontractor; Penalty.

- (a) The contractor who is awarded a contract by a public body or a subcontractor of the contractor shall pay not less than the rates determined under Section 2258.022 to a worker employed by it in the execution of the contract.
- (b) A contractor or subcontractor who violates this section shall pay to the state or a political subdivision of the state on whose behalf the contract is made, \$60 for each worker employed for each calendar day or part of the day that the worker is paid less than the wage rates stipulated in the contract. A public body awarding a contract shall specify this penalty in the contract.
- (c) A contractor or subcontractor does not violate this section if a public body awarding a contract does not determine the prevailing wage rates and specify the rates in the contract as provided by Section 2258.022.
- (d) The public body shall use any money collected under this section to offset the costs incurred in the administration of this chapter.
- (e) A municipality is entitled to collect a penalty under this section only if the municipality has a population of more than 10,000.

2258.051. Duty of Public Body to Hear Complaints and Withhold Payment.

A public body awarding a contract, and an agent or officer of the public body, shall:

- (1) take cognizance of complaints of all violations of this chapter committed in the execution of the contract; and
- (2) withhold money forfeited or required to be withheld under this chapter from the payments to the contractor under the contract, except that the public body may not withhold money from other than the final payment without a determination by the public body that there is good cause to believe that the contractor has violated this chapter.

Prevailing Wage Rates - School Construction Trades
 Effective March 1, 2016
Texas Gulf Coast Area

CLASSIFICATION	HOURLY RATE
Asbestos Worker	\$15.42
Bricklayers; Masons	\$18.34
Carpenters/Caseworker	\$21.50
Carpet Layers/Floor Installers	\$20.03
Concrete Finishers	\$16.13
Data Comm / Telecom Installer	\$23.50
Drywall Installers; Ceiling Installers	\$16.69
Electricians	\$22.44
Elevator Mechanics	\$30.00
Fire Proofing Installer	\$19.13
Glaziers	\$19.87
Heavy Equipment Operators	\$18.18
Insulators	\$16.16
Ironworkers	\$18.14
Laborers	\$11.81
Lather / Plasterer	\$18.03
Light Equipment Operators	\$15.21
Metal Building Assemblers	\$17.53
Millwrights	\$20.69
Painters/Wall Covering Installers	\$15.75
Pipefitters	\$25.70
Plumbers	\$26.50
Roofers	\$18.80
Sheet Metal Workers	\$20.46
Sprinkler Fitters	\$25.10
Steel Erector	\$19.33
Terrazzo Workers	\$19.67
Tile Setters	\$19.83
Waterproofers/Caulkers	\$19.00

This document was developed by PBK Architects, Inc. in strict accordance with the Texas Government Code Chapter 2258.

**Prevailing Wage Rates
 Worker Classification Definition Sheet**

Asbestos Worker	Worker who removes & disposes of asbestos materials.
Bricklayers/Masons	Craftsman who works with masonry products, stone, brick, block or any material substituting for those materials & accessories.
Carpenter / Caseworker	Worker who builds wood structures or structures of any material which has replaced wood. Includes rough & finish carpentry, hardware and trim.
Carpet Layer / Floor Installer	Worker who installs carpets and/or floor coverings-vinyl tile.
Concrete Finisher	Worker who floats, trowels and finishes concrete.
Data Communications/ Telecom Installer	Worker who installs data/telephone & television cable and associated equipment and accessories.
Drywall / Ceiling Installer	Worker who installs metal framed walls & ceilings, drywall coverings, ceiling grids
Electrician	Skilled craftsman who installs or repairs electrical wiring & devices. Includes fire alarm systems
Elevator Mechanic	Craftsman skilled in the installation & maintenance of elevators.
Fire Proofing Installer	Worker who sprays or applies fire proofing materials.
Glazier	Worker who installs glass, glazing and glass framing.
Heavy Equipment Operator	Includes, but not limited to, all Cat tractors, all derrick-powered, all power operated cranes, back-hoe, back-filler, power operated shovel, winch
Insulator	Worker who applies, sprays or installs insulation.
Iron Worker	Skilled craftsman who erects structural steel framing & installs structural concrete
Laborer / Helper	Worker qualified for only unskilled or semi-skilled work. Lifting, carrying materials & tools, hauling, digging, clean-up.
Lather / Plasterer	Worker who installs metal framing & lath. Worker who applies plaster to lathing and installs associated accessories.
Light Equipment Operator	Includes, but not limited to, air compressors, truck crane driver, flex plane, building elevator, form grader, concrete mixer (less than 14cf), conveyer.
Metal Building Assembler	Worker who assembles pre-made metal buildings.
Millwright	Mechanic specializing in the installation of heavy machinery, conveyance, wrenches, dock levelers, hydraulic lifts & align pumps.
Painter / Wall Covering Installer	Worker who prepares wall surfaces & applies paint and/or wall coverings, tape and bedding
Pipefitter	Trained worker who installs piping systems, chilled water piping & hot water (boiler) piping, pneumatic tubing controls, chillers, boilers & associated
Plumber	Skilled craftsman who installs domestic hot & cold water piping, waste piping, storm system piping, water closets, sinks, urinals, and related work.
Rofer	Worker who installs roofing materials, Bitumen (asphalt & coal tar) felts, flashings, all types roofing membranes & associated products.
Sheet Metal Worker	Worker who installs sheet metal products. Roof metal, flashings & curbs, ductwork, mechanical equipment and associated metals.
Sprinkler Fitter	Worker who installs fire sprinkler systems & fire protection equipment.
Steel Erector	Worker who erects and dismantles structural steel frames of buildings and other
Terrazzo Worker	Craftsman who places & finishes Terrazzo.
Tile Setter	Worker who prepares wall and/or floor surfaces & applies ceramic tiles to these
Waterproofor / Caulker	Worker who applies water proofing material to buildings. Products include sealant, caulk, sheet membrane, liquid membranes, sprayed, rolled or brushed.

End of Document

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 PROJECT DESCRIPTION

- A. The Project, 2018 Reroofing Package
Santa Fe Independent School District.

1.2 SCOPE OF WORK

- A. The Work shall consist of reroofing of the existing facilities as described in the Contract Documents.
- B. Renovations to the existing facility shall include, but shall not be limited to the following: roof tear off, replacement and associated flashing and sheet metal work and waterproofing.

1.3 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.

1.4 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

1.5 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.

1.6 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 be Substantially Complete as directed.
- 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 01 11 00

SECTION 01 21 00 - ALLOWANCES

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this 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. Owner's Contingency Allowances for E.Y. Cowen Education Center: \$25,000.00
- B. Owner's Contingency Allowances for Santa Fe Junior High School: \$75,000.00
- 1. Contractor shall include the amount indicated below 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 01 21 00

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

- A. Payment Includes: Full compensation for all required labor, Products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.
- B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Architect multiplied by the unit/sum price for Work which is incorporated in or made necessary by the Work.

1.6 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect will direct one (1) of the following remedies:
 - 1. The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price or reduced 50 percent at the discretion of the Architect.
 - 2. The defective Work will be partially repaired to the instructions of the Architect, and the unit sum/price will be adjusted to a new sum/price or reduced 50 percent at the discretion of the Architect.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
- D. The authority of the Architect to assess the defect and identify payment adjustment is final.

1.7 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of:
 - 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 the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the 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

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Removal and replacement of treated wood blockings: *(Include 250 linear feet of each dimension in Each Base Proposal)*.
 - 1. Unit Price shall be for entire unit cost including overhead and profit to provide removal and replacement of treated wood nailers which are not shown on the drawings, but which are found to be required.
 - 2X4
 - 2X6
 - 2X8
 - 2X12
 - 2. 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.

MEASUREMENT AND PAYMENT (UNIT PRICES)

01 22 00 - 2

3. Refer to Specification Sections for materials.
 4. Enter unit price on Proposal Form.
- B. Unit Price No. 2: Lightweight and metal deck replacement: *(Include 1,000 square feet in Base Proposal 2).*
1. Unit Price shall be for entire unit cost including overhead and profit to replace the lightweight and metal deck.
 2. The units to be used shall be dollars per square foot for adding or deleting units of work to or from that required by Base Proposal 2.
 3. Refer to Specification Sections for materials.
 4. Enter unit price on Proposal Form.
- C. Unit Price No. 3: Installation of additional base ply: *(Include 1,500 square feet in each Base Proposal).*
1. Unit Price shall be for entire unit cost including overhead and profit to install the additional square feet of base ply.
 2. The units to be used shall be dollars per square foot for adding or deleting units of work to or from that required by each Base Proposal.
 3. Refer to Specification Sections for materials.
 4. Enter unit price on Proposal Form.

END OF SECTION 01 22 00

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 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.
- 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.
 - 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 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 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 01 25 13

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 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 01 26 00

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 three (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 01 29 00

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 -
 - 8. Rough-In Material -
 - 9. Finish Labor -
 - 10. Finish Material -
 - 11. Allowances (listed separately)
 - 12. Roof warranty as a line item
 - 13.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 SCHEDULE OF VALUES

- A. Refer to following sample.

END OF SECTION 01 29 73

SCHEDULE OF VALUES

01 29 73 - 1

SECTION 01 29 73

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					
	Div. 1 - General Reqs. Site Work General Conditions Suoversion Mobilization Bonds & Insurance Permits Contractor's Fee Close-Out Documents								
	Div. 6 - Wood & Plastics Rough Carpentry - Labor Rough Carpentry - Materials Div. 6 - Total								
	Div. 7 - Thermal and Moisture Protection Waterpfng / Dampprfng-Matls Waterpfng / Dampprfng-Labor Metal Roof - Labor Metal Roof - Materials Metal Roof Guarantee Built-up Roofing-Labor Built-up Roofing-Materials Built-up Roofing Guarantee Roof Accessories Building Sheet Metal - Labor Building Sheet Metal - Matls Bldg. Sheet Metal Guarantee Roof Curbs Roof Hatches Sealants Close-Out Documents								
	Div. 7 - Total								
	General Conditions Mobilization Temp. Facilities Final Cleaning Record Documents/Close-out/ O&M Manuals Supervision Permits Bonds Insurance Allowances Alternates (list) Change Orders A. PR# B. PR# C. PR#								

SECTION 01 29 73

SCHEDULE OF VALUES - SAMPLE

Item No.	Description of Work	Scheduled Value	Work Completed		Stored Materials	Total Completed	%	Balance To Finish	Retainage
			Previous App.	This App.					

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 48 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.
 - 3. Division 7 - Installation of roofing system(s) and associated work.
- C. In addition to notifying the Architect, notify the Structural Engineer (48 hours) prior to the following stages:
 - 1. Drilling, reinforcing, and placing of first piers and footings.
 - 2. Placing first reinforcing and grade beams.
 - 3. 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 01 31 13

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 01 31 19

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 be Substantially Completed to be determined.
 - 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 01 32 16

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. The Texas Asbestos Health Protection Rules (Title 25. Health Services, Part I. Texas Department of Health Chapter 295 - Occupational Health, Subchapter C - Texas Asbestos Health Protection) were approved and became effective on October 20, 1992, and amended March 27, 2003. The Rules established the procedures and means to implement the provisions of Senate Bill 1341 and House Bill 79.
- B. 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, including, but not limited to the following, as applicable to the Project.
 - 1. Surfacing Materials:
 - a. acoustical plaster;
 - b. decorative plaster/stucco;
 - c. textured paint/coating;
 - d. spray applied insulation;
 - e. blown-in insulation
 - f. fire proofing insulation;
 - g. joint compound; and
 - h. spackling compounds
 - 2. Thermal System Insulation:
 - a. taping compounds (thermal)
 - b. HVAC duct insulation;
 - c. boiler insulation;
 - d. breaching insulation;
 - e. pipe insulation; and
 - f. thermal paper products
 - 3. Miscellaneous Material:
 - a. cement wallboard/siding;
 - b. asphalt/vinyl floor tile
 - c. vinyl sheet flooring/vinyl wall coverings;
 - d. floor backing;
 - e. construction mastic;
 - f. ceiling tiles/lay-in ceiling panels;
 - g. packing materials;
 - h. high temperature gaskets;
 - i. laboratory hoods/table tops
 - j. fire blankets/curtains;
 - k. elevator equipment panels;
 - l. elevator brake shoes;

- m. ductwork flexible fabric connections;
- n. cooling towers;
- o. heating and electrical ducts;
- p. electrical panel partitions;
- q. electrical cloth/electrical wiring insulation;
- r. chalkboards;
- s. roofing shingles/tiles;
- t. roofing felt;
- u. base flashing;
- v. fire doors;
- w. caulking/putties;
- x. adhesives/mastics; and
- y. wallboard

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 four (4) site photographs at project corners
 - 2. Interior views: Take two (2) minimum interior photographs of each space under construction from differing directions or as required.
 - 3. Exterior views: Take two (2) photographs of each elevation.
 - 4. 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.
 - 5. 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

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 EXAMINATION

- A. Verify that areas are ready for alteration and remodeling.
- B. Discrepancies: Verify dimensions and elevations indicated in layout of existing work.
 - 1. Prior to commencing work, carefully compare and check Contract Documents for discrepancies in locations or elevations of work to be executed.
 - 2. Refer discrepancies among Drawings and existing conditions to Architect for adjustment before work affected is performed.

3.3 PREPARATION

- A. Construct temporary fire-rated partitions to separate existing occupied areas from construction and alteration areas. Comply with provisions of Division 01 Section "Temporary Facilities and Controls."
- B. Cut, move, or remove items as necessary for access to alteration and renovation Work.
 - 1. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, deteriorated masonry and concrete, and other deteriorated materials. Replace materials as specified for finished Work.
 - 2. Remove debris and abandoned items from area and from concealed spaces.
- C. Cutting and Removal: Perform cutting and removal work to remove minimum necessary, and in manner to avoid damage to adjacent work. Cut finish surfaces such as masonry,

tile, plaster, or metals by methods to terminate surfaces in straight line at natural point of division.

- D. Prepare surface and remove surface finishes as necessary to provide for proper installation of new materials and finishes.
- E. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.
- F. Provide temporary barriers and closures to control operations to prevent spread of dust to occupied portions of building.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- B. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 - 2. Vertical Openings: Close openings of 25 sq. ft. or less with plywood or similar materials.
 - 3. Horizontal Openings: Close openings in floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
 - 4. Install tarpaulins securely using fire-retardant-treated wood framing and other materials.
 - 5. Where temporary wood or plywood enclosure exceeds 100 sq. ft. in area, use fire-retardant-treated material for framing and main sheathing.
- C. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
 - 1. Construct non-fire-rated dustproof partitions of not less than nominal 4-inch studs, 1/2-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on construction side.
 - 2. Insulate partitions to provide noise protection to occupied areas.
 - 3. Seal joints and perimeter.
 - 4. Equip partitions with dustproof doors and security locks.
 - 5. Protect air-handling equipment.
 - 6. Weatherstrip openings.
- D. Temporary Fire-Rated Partitions: Erect and maintain dustproof fire-rated partitions and temporary enclosures to limit dust and dirt migration and to separate occupied areas from construction, fumes, and noise. Fire-rated partitions shall be provided to separate existing occupied areas from construction areas in accordance with NFPA 241.
 - 1. Construct fire-rated dustproof partitions of not less than nominal 4-inch studs, 1/2-inch or 5/8-inch Type X gypsum wallboard on both sides, with joints taped.
 - 2. Extend partitions up to underside of existing structure to the greatest extent possible.
 - 3. Insulate partitions to provide noise protection to occupied areas.
 - 4. Seal joints and perimeter with fire-resistant joint sealant.

5. Equip partitions with dustproof doors and security locks.
 - a. Protect openings in 1-hour fire-rated partitions with 45-minute hollow metal or solid core wood doors.
 6. Protect air-handling equipment.
 7. Weatherstrip openings.
- E. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
 - a. Field Offices: Class A stored-pressure water-type extinguishers.
 - b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
 - c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
 6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction. Remove and replace materials with mold.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.

5. Do not install material that is wet.
 6. Discard, replace or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use permanent HVAC system to control humidity.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
- E. Wet and Water-Damaged Materials:
1. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 24 hours are considered defective.
 2. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record daily readings over a forty-eight hour period. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
 3. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 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. Resilient Tiles: Remove in whole units to natural breaking points or straight joint lines with no damaged or defective existing tiles remaining where joining new construction.
 5. Salvaged Materials: Carefully remove to avoid damage, thoroughly clean and reinstall as indicated, or as directed.
 6. Doors: Remove in such a manner as to facilitate filling in of openings or installation of new Work, as required by Drawings.
 7. 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.

3.7 EXISTING FURNITURE AND EQUIPMENT

- A. Owner Salvaged Items: Personal items in areas subject to remodeling will be removed before construction in those areas commences.
- B. Furniture Items: Before remodeling commences, Owner will remove all furniture and equipment from each space, store items as necessary. Owner will replace these items to the same locations after each remodeling phase is complete. Contractor to coordinate activities with Owner.

3.8 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.

3.9 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 01 35 16

SECTION 01 41 00 - 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. 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, 11 Greenway Plaza, 22nd Floor, Houston, Texas 77046, (713) 965-0608, 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 Texas 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 Fe ISD", SFISD, or similar such term appears in the Contract Documents, it means the Santa Fe Independent School District, 13310 Highway 6 Santa Fe, Texas 77510, phone number (409) 925-3526, or its authorized representative(s).
- I. Consultants: Wherever the term "Consultant", or any derivative thereof appears in the Contract Documents, it means the following to whom that portion of the work applies.
1. Architect's Consultants:
 - a. Facilities Consultant: PBK, *Facilities Group*, 11 Greenway Plaza, 22nd Floor, Houston, Texas 77046 (713) 965-0608, or their 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 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

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
ASAHC	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.

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 hangwires, 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, shall be Y2K compliant. 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 01 41 00

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.
 - 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 01 45 00

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, field office, sanitary facilities, storage facilities, signs, barriers, security, cleaning, first aid facilities, fire protection, construction aids, and parking facilities as further expanded in this Section.
- B. This Section covers the temporary facilities required by the Construction Manager for the Construction Manager's use only. Subcontractor's and Suppliers are responsible for their own temporary facilities as required by their scope of work. The Construction Manager will provide limited temporary facilities for the use of the subcontractor supplier as they become available. Subcontractors and Suppliers are referred to Section AC for further details.

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:
 - 01 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.
 - 02 Contractor shall 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: Construction Manager/Contractor shall use temporary power from existing utilities, but must provide all wiring, lamps, distribution of power, and equipment required for construction, inspection and testing of Work.
- B. Temporary Water: Construction Manager/Contractor shall use temporary water from existing utilities, but must provide all hoses and equipment required for construction, inspection and testing of Work.

3.2 FIELD OFFICE

- A. Construction Manager/Contractor does not need to provide a job trailer. Job trailers may be provided if contractor deems them necessary.

3.3 SANITARY FACILITIES

- A. Construction Manager/Contractor shall furnish and maintain temporary sanitary facilities. Comply with regulations of State Department of Health and other authorities having jurisdiction. Construction Manager/Contractor may not use the Owner's facilities.

3.4 STORAGE FACILITIES

- A. Construction Manager/Contractor shall provide and maintain adequate weathertight lockable storage facilities, raised above the ground, with sides and top enclosed.
- B. Construction Manager/Contractor shall replace materials improperly stored and damaged by weathered conditions.
- C. Construction Manager/Contractor shall remove storage facilities when materials can be stored within the structure in a weathertight condition.
- D. Construction Manager/Contractor shall provide for temporary freeze protection as needed.

3.5 SIGNS

- A. Other signs permitted at the site:
 - 01 Warning signs.
 - 02 Directional signs.
 - 03 Identification signs at field offices.
 - 04 Emergency medical services sign.
- B. Construction Manager/Contractor shall allow no other signs to be displayed at the project site, unless authorized by the Owner.

3.6 BARRIERS, CONSTRUCTION FENCE AND SECURITY

- A. Construction Manager/Contractor shall:
 - 01 Provide temporary barricades on all portions of the site adjacent to the construction and accessible to the public;
 - 02 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;

- 03 Provide a minimum 6 feet-0 inch high chain link construction fence around the area of the kettle or pump trailer and any stored dangerous material for the duration of the construction period. Said temporary construction fence shall have lockable access gates necessary to adequately access the area in order to execute the project. Access gates shall be locked at the completion of each days' work; and
- 04 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 Construction Manager/Contractor of responsibility in event of injury to persons or damage to property.

3.7 CLEANING

- A. Trash Removal: Construction Manager/Contractor shall clear the 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: Construction Manager/Contractor shall remove debris from site and make legal disposition. Locations for disposal shall be of the Construction Manager's/Contractor's choice within the above restriction. No debris nor material may be buried or burned at the site, without the permission of authorities having jurisdiction. Take necessary precautions to prevent accidental burning of materials by avoiding large accumulations of combustible materials.

3.8 TEMPORARY FIRST AID FACILITIES

- A. Construction Manager/Contractor shall:
 - 01 Provide first aid equipment and supplies, with qualified personnel continuously available to render first aid at the site; and
 - 02 Provide a sign, posted at the field office telephone or job site construction manual, listing the telephone numbers for emergency medical services: Physicians, ambulance services and hospitals.

3.9 TEMPORARY FIRE PROTECTION

- A. Construction Manager/Contractor shall 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:
 - 01 Hand extinguishers of the types and sizes recommended by the National Board of Fire Underwriters to control fires from particular hazards.
 - 02 Barrels of water with buckets designated for fire-control purposes.
 - 03 Water hoses connected to an adequate water pressure and supply system as needed.
 - 04 Construction period use of permanent fire protection system.
- C. Enforce fire-safety discipline:
 - 01 Store volatile materials in an isolated, protected location.
 - 02 Avoid accumulations of flammable debris and waste in or about the Project.
 - 03 Prohibit smoking in the vicinity of hazardous conditions.
 - 04 Closely supervise welding and torch-cutting operations in the vicinity of combustible materials and volatile conditions.
 - 05 Supervise locations and operations of portable heating units and fuel.

- D. Construction Manager/Contractor shall maintain fire extinguishing equipment in working condition, with current inspection certificate attached to each extinguisher.

3.10 CONSTRUCTION AIDS

- A. Construction Manager/Contractor shall:
 - 01 Provide construction aids and equipment required to assure safety for personnel and to facilitate the execution of the work, i.e. scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other equipment applicable and required for the performance of the work; and
 - 02 Maintain all equipment in a first-class, safe condition.

3.11 PARKING FACILITIES

- A. Construction Manager/Contractor shall:
 - 01 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; and

END OF SECTION 01 50 00

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.

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.
 - 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 01 73 29

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 spine 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.

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.
 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

- 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 (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 blueprints 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 Contractor's 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 Contractors 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 warrantees with Closeout Documents submitted to the Architect.

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 01 77 00

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: 2018 Reroofing Package
 Owner: Santa Fe Independent School District Architect: PBK/BEAM
 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)

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

DISTRICT: Santa Fe ISD

Facility:

ARCHITECT/ENGINEER: PBK/BEAM

Address:

CONTRACTOR/CM:

City:

CONTRACT DATE:

DATE DISTRICT AUTHORIZED PROJECT:

BRIEF DESCRIPTION OF PROJECT:

Reroof Package at the Santa Fe Junior High School & at E.Y Cowan Education Center.

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 Texas, 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 TEXAS EDUCATION AGENCY. The school district will retain this document in their files indefinitely until review and/or submittal is required by representatives of the Texas Education Agency.

CLOSE-OUT FORM "C"

SUBCONTRACTOR HAZARDOUS MATERIAL CERTIFICATE

THE STATE OF _____ PROJECT: 2018 Reroofing Package
COUNTY OF _____ OWNER: Santa Fe Independent School District
ARCHITECT: PBK/BEAM
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: [Insert Project Name]
 Owner: [Insert District Name] Independent School District Architect: PBK/BEAM
 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. Architects/Engineers 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.

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 01 78 39

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Requirements including but not limited to:
 1. Demolition and removal of selected portions of building or structure.
 2. Demolition and removal of selected site elements.
 3. Salvage of existing items to be reused or recycled.
 4. Accessories necessary for demolition and deconstruction.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose offsite unless indicated as salvaged or reinstallation.
- B. Remove and Reinstall: Detach items from existing construction with care to prevent damage, clean and refurbish, prepare for reuse, store as necessary, and reinstall where indicated.
- C. Existing to Remain: Leave existing items that are not scheduled for salvage or reuse, as is; do not remove.
- D. Deconstruct: To remove by disassembling or detaching an item from a surface, using methods and equipment to successfully prevent damage to the item and surfaces; and dispose of items unless indicated as salvaged or for reinstallation.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and the contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner. Salvage to prevent damage and promptly return to Owner.

1.5 SUBMITTALS

- A. Qualification Data: Submit copies of qualifications for refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, indicating proposed measures for protecting individuals and property, for environmental protection, dust control and noise control. Indicate proposed locations, types, and construction of barriers.
- D. Schedule of Selective Demolition Activities:
 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on site operations are uninterrupted.

2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Use of elevator and stairs.
 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Inventory: Submit a list of items for removal and salvage and deliver to Owner prior to start of demolition.
- F. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that could be construed as damage caused by demolition operations. Comply with Section 013230. Submit prior to commencement of the work.
- G. Statement of Refrigerant Recovery: Submit statement signed by refrigerant recovery technician responsible for recovering refrigerant, stating that refrigerant present was recovered and recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- H. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Demolition Standards: Comply with ASSE A10.6 and NFPA 241.
 2. Comply with EPA regulations prior to commencement of the work. Comply with hauling and disposal regulations of authorities having jurisdiction.
 3. Comply with applicable federal, state, and local codes for demolition work, dust and noise control, safety of structure, and debris removal.
 4. Obtain required permits from authorities having jurisdiction.
- B. Refrigerant Recovery Technician Qualifications: Certified by an EPA approved certification program.
- C. Predemolition Conference: Conduct conference at the site.
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review structural load limitations of existing structure.
 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 5. Review areas where existing construction is to remain and requires protection.

1.7 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide minimum of 72 hours' notice to Owner of demolition activities that will affect Owner's operations including but not limited to:
1. Interruption of power.
 2. Interruption of utility services.
 3. Excessive noise.

- B. Condition of Structure: Conditions existing at time of inspection will be maintained by Owner as far as practical. Owner assumes no responsibility for actual condition of items or structures to be demolished.
 - 1. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

- C. Hazardous Materials: It is not anticipated that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

- D. Historic Areas: Demolition and hauling equipment and other materials shall be of sizes that clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by at least 12 inches (300 mm).

- E. Storage or sale of removed items or materials on site is not permitted.

- F. Traffic: Conduct operations and debris removal to ensure minimum interference with roads, streets, drives, fire lanes, walks, accessible paths, and adjacent occupied or used facilities.
 - 1. Do not close, block, or obstruct streets, drives, walks, or occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around obstructed traffic ways.

- G. Explosives: Explosives are not permitted at the site.

- H. Flame Cutting: Do not use cutting torches for removal until flammable materials are removed. At concealed spaces, verify conditions prior to flame cutting operations. Maintain portable fire suppression devices during flame cutting operations.

- I. Environmental Controls: Use water sprinkling, temporary enclosures, or other acceptable methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions.

- J. Utility Services: Maintain existing utilities and protect against damage during demolition operations.
 - 1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, acceptable to Owner and governing authorities.

- K. Protections: Provide temporary barriers to protect Owner's personnel and public from injury from work.
 - 1. Take protective measures to provide free and safe passage to occupied portions of building.
 - 2. Provide protection to ensure safe passage of the Owner's personnel and the public around demolition areas and to and from occupied portions of adjacent areas, buildings, and structures.
 - 3. Provide shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
 - 4. Protect existing work which becomes exposed during demolition operations.
 - a. Protect existing improvements, appurtenances, and conditions to remain.
 - b. Protect adjacent floors with coverings.

- c. Protect walls, openings, roofs, and adjacent exterior construction to remain and exposed to building demolition operations.
- 5. Construct temporary insulated dustproof partitions to separate areas from noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks. Refer to Drawings for location of partitions to be provided.
- 6. Provide temporary weather protection when exposing exterior conditions to prevent water leakage or damage to structure or interior areas of existing building.
- L. Damages: Promptly repair damages caused to adjacent facilities by demolition work.

1.8 COORDINATION

- A. Arrange selective demolition schedule to avoid interference with Owner's and the school's operations.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor prior to proceeding. Existing warranties to be provided by Owner prior to the start of construction.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying existing system has been inspected and warranty remains in effect. Submit supporting documentation at closeout.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Repair Materials: Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equals or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that affected utilities have been disconnected and capped before commencing selective demolition operations.
- B. Review Project Record Documents of existing construction or existing condition and hazardous material information provided by Owner. Owner does not warrant existing conditions are same as those indicated in Project Record Documents.
- C. Perform an engineering survey of condition of building to determine whether removing an element might result in structural deficiency or unplanned collapse of a portion of structure or adjacent structures during selective building demolition operations.

1. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.
- D. Steel Tendons: Locate tensioned steel tendons and include recommendations for detensioning.
- E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- F. Survey of Existing Conditions: Record existing conditions with measured drawings or preconstruction photographs or video and templates.
 1. Comply with requirements specified in Section 01 32 33.
 2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
 4. For any electrical or low-voltage work to be performed in the project (including fire alarm, PA, intercom, or data), test entire system for operation prior to initiation of work. Notify Owner of any non-working components. Test entire system at the end of construction to ensure all systems operate properly.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.
- B. Pest Control: Employ certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.
- C. Site Access and Temporary Controls: Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities. Comply with requirements for access and protection.
- D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling.
- E. Furnishings and Equipment: Cover and protect furniture, equipment, and fixtures from spoilage or damage as necessary.
- F. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
 1. Construct dustproof partitions of not less than nominal 4 inch (100mm) studs, 5/8 inch (16mm) gypsum wallboard with joints taped on occupied side, and 1/2 inch (13mm) fire retardant plywood on the demolition side.

2. Insulate partition to provide noise protection to occupied areas.
3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
4. Protect air handling equipment.
5. Weatherstrip openings to prevent the spread of dust.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 2. Arrange to shut off utilities with utility companies.
 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 4. Disconnect, demolish, and remove fire suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 POLLUTION CONTROLS

- A. Dust Control: Use water mist, temporary enclosures, and suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations including, but not limited to SCAQMD Rule 403 (Fugitive Test).
 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

3.5 PROTECTION

- A. Temporary Protection: Provide temporary barricades and protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - a. Erect temporary pathways and means of egress necessary for ongoing operations compliant with Code and accessibility regulations.
 - b. Provide temporary barricades and protection required to prevent injury and damage to adjacent buildings and facilities to remain.

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - a. Protect existing work which becomes exposed during demolition operations.
 - b. Protect adjacent entrances from damage due to demolition activities.
 - c. Protect existing improvements, appurtenances, and conditions to remain.
 - d. Protect floors with covering.
 - e. Protect walls, openings, roofs, and adjacent exterior construction to remain and exposed to building demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 00.
 - a. Construct temporary insulated dustproof partitions to separate areas from noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors and security locks.
 - b. Construct dustproof partitions of not less than nominal 4 inch (100mm) studs, 5/8 inch (16mm) gypsum wallboard with joints taped on occupied side, and 1/2 inch (13mm) fire retardant plywood on the demolition side.
 - c. Insulate partition to provide noise protection to occupied areas.
 - d. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
 - e. Protect air handling equipment.
 - f. Weatherstrip openings.
 6. Damage: Promptly repair damages to adjacent components cause by demolition activities.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.6 SELECTIVE DEMOLITION

- A. Demolish and remove existing construction to the extent necessary for new work. Use methods required to complete the work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame cutting operations. Maintain portable fire suppression devices during flame cutting operations.
 5. Maintain fire watch during and for at least 24 hours after flame cutting operations.
 6. Maintain adequate ventilation when using cutting torches.

7. Remove decayed, vermin infested, and dangerous or unsuitable materials and promptly dispose of offsite.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials to avoid imposing excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and adjacent occupied and used facilities.
- C. Removed and Salvaged Items: Remove items indicated for salvage. Clean and pack or crate items after cleaning. Identify contents of containers. Store items in secure area until delivery to Owner.
1. Transport items to Owner's storage area designated by Owner. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items: Clean and repair items to functional condition adequate for intended reuse.
1. Pack or crate items after cleaning and repairing. Identify contents of containers.
 2. Protect items from damage during transport and storage.
 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during selective demolition, cleaned, and reinstalled in original locations after selective demolition operations are complete.
- F. Patching and Repair: Repair damage to adjacent construction caused by selective demolition operations promptly.

3.7 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power driven saw, and then remove masonry between saw cuts.
- B. Partitions: Completely remove indicated interior partitions and interior finishes indicated. Leave adjacent work scheduled to remain sound and ready for patching or for new finishes.
- C. Cut existing masonry walls for new doors, windows, or openings indicated. Leave openings ready to receive new work or patching.
- D. Windows: Remove existing windows where indicated. Remove associated anchors, shims, blocking, operating devices, sealant, and trim. Cut back interior finishes required for plumb surface for patching. Leave openings ready for installation of new materials and finishes.

3.8 REMOVAL OF STRUCTURAL ELEMENTS

- A. Saw Cutting: Locate compressors as remote as possible from occupied areas of facility.
1. Use diamond tipped saw blades and related equipment.
 2. Saw cut portions of walls and slabs. Angle saw blade at floors and corners to cut as closely as possible to desired location.

3. Control runoff water used with saw to prevent damage to existing materials.

3.9 ROOF REMOVAL

- A. Roof Assembly: Remove existing roofing to the extent that can be covered in one day by new roofing. Maintain building interior in watertight and weathertight condition.
 1. Remove existing roof membrane, flashings, copings, and roof accessories.
 2. Remove existing roofing system down to substrate.
- B. At existing parapets, remove portions of roofing, flashing, stone, and masonry necessary to weld new steel and set form work. Provide temporary watertight enclosures over areas of open roof and temporarily flash to make watertight.
- C. When removing roofing to place supports for shoring of form work to transfer loads to existing columns or approved structure or to support scaffolding, work platforms, or similar loads, temporarily flash supports to make roof watertight.
- D. Remove excess residue. Thoroughly clean and remove asphalt, dust, loose materials and leave ready for new work.

3.10 PATCHING AND REPAIRS

- A. Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Section 01 73 29.
- C. Repairs: When necessary to repair existing surfaces, patch to produce surfaces suitable for new materials.
 1. Fill holes and depressions in existing masonry walls to remain with masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.11 DISPOSAL OF DEMOLISHED MATERIALS

- A. Legally remove demolition waste materials from site and dispose in an EPA approved construction and demolition waste landfill acceptable to authorities having jurisdiction recycle or reuse components.
 1. Do not allow demolished materials to accumulate on site.
 2. Remove and transport debris to prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or devices that convey debris to grade level in a controlled descent.
 4. Comply with requirements specified in Section 01 74 00.
- B. Burning: Do not burn demolished materials.

3.12 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 41 19

SECTION 04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

- A. Concrete masonry units (CMU)
- B. Face brick, including solids.
- C. Mortar, grout, reinforcement, anchorages, flashing, and accessories shown, specified, or required to complete Work.

1.3 RELATED WORK

- A. Section 01 45 23 - Testing and Inspecting Services
- B. Section 05 50 00 - Miscellaneous Metals: Steel masonry lintels.
- C. Section 07 92 00 - Building Sealants
- D. All Sections of Work built-in, adjacent to, or applied to unit masonry work.

1.4 REFERENCES

- A. ASTM International (ASTM)
 - 1. A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron & Steel Hardware
 - 2. A307, Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
 - 3. A615, Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
 - 4. A706, Standard Specification for Low-Alloy Steel Deformed Bars for Concrete
 - 5. C67, Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile
 - 6. C90, Standard Specification for Loadbearing Concrete Masonry Units
 - 7. C140, Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units
 - 8. C144, Standard Specification for Aggregate for Masonry Mortar
 - 9. C150, Standard Specification for Portland Cement
 - 10. C207, Standard Specification for Hydrated Lime for Masonry Purposes
 - 11. C216, Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)
 - 12. C270, Standard Specification for Mortar for Unit Masonry
 - 13. C331, Standard Specification for Lightweight Aggregates for Concrete Masonry Units
 - 14. C332, Standard Specification for Lightweight Aggregates for Insulating Concrete
 - 15. C404, Standard Specification for Aggregates for Masonry Grout
 - 16. C476, Standard Specification for Grout for Masonry

17. C578, Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation
18. C652, Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale)
19. C780, Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
20. C979, Standard Specification for Pigments for Integrally Colored Concrete
21. D226, Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
22. D1751, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
23. E119, Standard Test Methods for Fire Tests of Building Construction and Materials

B. Underwriters' Laboratories, Inc. (UL)

1.5 QUALITY ASSURANCE

- A. Where requirements of this Section are in conflict with requirements noted on the Structural Drawings, the Structural Drawings shall take precedence. Refer to Structural Drawings for information on load-bearing CMU walls.
- B. Fire Performance Characteristics: Where indicated or required, provide materials and construction which are identical to assemblies whose fire endurance has been determined by testing in compliance with ASTM E119 by U.L. or other recognized testing and inspection organization or by other means, acceptable to authority having jurisdiction.
- C. Masonry Cleaning: Workers shall have minimum 5 years of masonry cleaning experience, and shall be approved by cleaner manufacturer prior to application of cleaning material, and shall meet with cleaner manufacturer for demonstration and instructions for use of product prior to application.
- D. Single Source Responsibility:
 1. For Masonry Units: Obtain masonry units of uniform texture and color, or a uniform blend within the accepted ranges for those characteristics, from one (1) manufacturer for each different product required for each continuous surface or visually related surfaces.
 2. For Mortar and Grout Materials: Brands of cementitious materials and admixtures, and the source of supply of sand and aggregates shall remain the same throughout the Work where exposed to view and where not scheduled to receive a subsequently applied finish, i.e. parging, painting, etc., unless directed otherwise in writing by the Architect.
 3. Contractor's Responsibility: Contractor performing Work of this Section shall be responsible for coordinating with others performing work which is built-in or adjacent to unit masonry work.

1.6 SUBMITTALS

- A. Product Data: Submit schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, and accessories.
- B. Samples: Two (2) sets of color chips representing manufacturer's full range of available colors and textures of each face brick for Architect's selection and approval.
- C. Sample Panel(s):
 1. Do not start masonry until Architect has approved samples.

2. Sample panel shall be 6 feet long by 8 feet high showing selected color range and texture, bonding, joint shape, and quality of workmanship. Include a brick and expansion joint, and any specialty details, such as reveals, soldier courses, etc. Include mock-up of installation of thru-wall flashing at foundation sill and lintel above openings.
 3. Brace and support as required to withstand structural windloads.
 4. A separate panel for each type of masonry and back up wall used is required.
 5. Sample panel(s) shall remain at the jobsite until the approval of the Architect, Owner and commissioning consultant agree it can be removed.
 6. Installed materials shall be visible and integrated into adjacent materials.
- D. Certification: Submit manufacturer's affidavit that materials used in Project contain no asbestos.
- E. Mortar and Grout Mix Designs: Submit two (2) copies of proposed mortar and grout mix designs to Owner's testing laboratory.

1.7 PRE-INSTALLATION CONFERENCE

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

1.8 TESTS AND INSPECTIONS

- A. Materials and installation of masonry shall be subject to testing and inspection by an independent testing laboratory. Such tests and inspections shall not relieve Contractor of responsibilities for providing materials and procedures which comply with Contract Documents. Promptly remove and replace materials which do not comply.
- B. Owner will select Inspection and Testing Laboratory and will pay for all Work required by Inspection and Testing Laboratory.

1.9 DELIVERY, STORAGE AND PROTECTION

- A. Deliver and store materials in dry protected areas off ground. Keep free of stain or other damage before, during and after installation. Replace any damaged material at no cost to Owner.
- B. During freezing weather, protect masonry units with tarpaulins or other suitable material. Keep free of stain or other damage before, during and after installation. Replace damaged material at no cost to Owner.
- C. Protect reinforcement and accessories from elements.

1.10 SITE CONDITIONS

- A. Cold Weather Protection:
1. No masonry shall be laid when the temperature of the outside air is below 40 degrees F, unless protection measures are employed and pre-approved by the Architect.
 2. Protection measures for cold weather erection include maintaining space and masonry unit temperatures of at least 40 degrees F for 48 hours prior to and after erection.
- B. Hot Weather Protection:
1. When the mean daily temperature exceeds 100 degrees F or exceeds 90 degrees F with a wind velocity greater than 8 mph, fog spray all newly constructed

masonry until damp, at least three (3) times a day until the masonry is three (3) days old. Each fog spray application shall be at least 3 hours after the previous spray.

1.11 BRACING OF MASONRY DURING ERECTION

- A. All masonry shall be adequately braced at all times during erection.

1.12 COORDINATION

- A. Openings and chases for heating, plumbing, electrical ducts, pipes, and conduits shall be built into masonry walls as required. Provide for installation of bolts, toggles, flashings, beams, anchors, hangers, nailing strips, wall plugs, and frames as required. Consult other trades in advance and make provisions for installation of their work to avoid cutting and patching. Coordinate installation of steel reinforcement for reinforced masonry. Coordinate placement of concrete in masonry beams, lintels, soffits, and pilasters.
- B. Contractor performing Work of this Section shall be responsible for and coordinate with work of all Sections of Work built-in, adjacent to, or applied to unit masonry work.

1.13 WARRANTY

- A. Warrant the Work specified herein for five (5) year against becoming unserviceable or causing an objectionable appearance resulting from either defective or nonconforming materials or workmanship.
- B. Defects shall include, but not be limited to, the following:
 - 1. Noticeable deterioration of unit or mortar finish.
 - 2. Chalking or dusting excessively.
 - 3. Changing color in irregular fashion.
 - 4. Cracking or spalling.
 - 5. Releasing from substrate.
 - 6. Staining or discoloring, including efflorescence.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

- A. Specifications are based on products of manufacturers named within the specifications. Other manufacturers must have a minimum of five (5) years experience manufacturing products equal to those specified and comply with requirements of Division 1 regarding substitutions to be considered.

2.2 MATERIALS

- A. Concrete Masonry Units (CMU/Block):
 - 1. Type/Sizes:
 - a. Concealed cavity block and interior block, unless otherwise noted: Regular smooth face units with 8 inch by 16 inch face dimensions as shown on drawings or required, 4 inch, 6 inch, 8 inch, and 12 inch depths as indicated on drawings.
 - 1) Color: Standard
 - 2. Specification: Comply with ASTM C90 (Class D-2 (2 hour) and Class B-4 (4 hour)) block at rated walls)
 - a. Grade: Type N, highest standard for typical cavity block and interior use. Type S, for exterior exposed masonry walls.

- b. Aggregate: Lightweight in accordance with ASTM C331
 3. Curing: Rotary kiln process.
 4. Provide bullnose units at all outside corners.
 5. Provide bond beams, control joints, jambs, lintels, soaps, cap blocks, and fillers to match and compliment block units as shown or required.
 6. Approved Manufacturers:
 - a. Builders Concrete Products
 - b. Featherlite Building Products
 - c. Headwaters Construction Products
 - d. Innovative Precast Concrete Products (IPC)
 - e. Revels Block & Brick Co., Inc.
 - f. Texas Building Products, Inc.
 - g. Texas Industries, Inc.
 - h. Trenwyth Industries, Inc.
- B. Face Brick: To match existing; comply with the requirements of ASTM C216 or C652, Grade SW, in accordance with the following list, including solids and special shapes as indicated or required (all colors).
 1. Brick : Match Existing
- C. Mortar:
 1. Materials: (Unless stated otherwise on Structural Drawings)
 - a. Portland Cement: ASTM C150, Type 1.
 - b. Hydrated Lime: ASTM C207, TYPE "N", typical. Use TYPE "S" for load-bearing masonry.
 - c. Aggregate: Sand conforming to ASTM C144
 - d. Water: Clean and potable
 - e. Admixtures For Mortar:
 - 1) General: Do not use calcium chloride
 - 2) Integral Water Repellant (In mortar of exterior exposed CMU): "Dry- Block Mortar Admixture" integral water repellant admixture as manufacturer by W.R. Grace & Co., or equal. Note: Water repellent block admixture and mortar admixture are not interchangeable.
 2. Mix Design: (Proportions by volume) (Unless stated otherwise on Structural Drawings)
 - a. Typical, Non-load bearing masonry
 - 1) Type: ASTM C270, Type "N"
 - 2) Proportions: 1 part cement, 1 part hydrated lime and 6 parts sand to provide a compressive strength of 750 psi in 28 days. Do not use calcium chloride.
 - b. Load bearing structural masonry
 - 1) Type: ASTM C270, Type "S"
 - 2) Proportions: 1 part cement, 1/2 part hydrated lime and 4-1/2 parts sand to provide a compressive strength of 1800 psi in 28 days. Do not use calcium chloride.
- D. Grout:
 1. Materials: (Unless stated otherwise on Structural Drawings)
 - a. Hydrated Lime: ASTM C207, TYPE "S"
 - b. Portland Cement: ASTM C150, Type 1.
 - c. Water: Clean and potable
 - d. Aggregates:
 - 1) Course aggregate shall conform to ASTM C404.
 - 2) Fine aggregate shall conform to ASTM C144.
 2. Mix Design: (Unless stated otherwise on Structural Drawings)

- a. Comply with ASTM C476 to provide a compressive strength of 2,500 psi in 28 days, unless noted otherwise. Do not use calcium chloride.
 - 1) Fine Grout: Fine grout conforming to ASTM C476 and consisting of 1 part Portland cement, 0 to 1/10 part lime and 2-1/4 to 3 parts sand by volume.
 - 2) Course Grout Mix: Course grout conforming to ASTM C476 and consisting of 1 part Portland cement, 0 to 1/10 part lime and 2-1/4 to 3 parts sand, and 1 to 2 parts course aggregate.
- E. Flashing:
 1. Membrane Flashing:
 - a. Self-Adhered Flexible Flashing: 40-mil, rubberized asphalt adhesive reinforced flashing with a high density cross laminated polyethylene film. Provide compatible substrate primer as instructed by manufacturer.
 - b. Approved Products / Manufacturers:
 - 1) "TW-Thru Wall Flashing" manufactured by Tamko Waterproofing.
- F. Reinforcement, Anchors and Tie Systems:
 1. General: Reinforcement used in all wythes shall be galvanized after fabrication in accordance with ASTM A153, Class B-2.
 2. Approved Manufacturers include the following:
 - a. Dur-O-Wal
 - b. Heckmann Building Products
 - c. Hohmann & Barnard, Inc
 - d. Wire-Bond
 3. At solid multiple wythe masonry walls and single wythe masonry walls, (Interior partitions) use #9 gauge truss type reinforcing. Pre-fab corners and tees shall be used at all wall corners and intersections; width shall be two (2) inches less than nominal thickness of walls. Dur-O-Wal "Truss" at single wythe; "Trirod" at multiple, or Architect approved equal.
 4. At Double Wythe Cavity Walls with Insulation Board: Use Hot-dipped galvanized, #9 gauge truss type with 3/16 inch adjustable pintle wall ties. Width of truss reinforcement shall be 2 inches less than the nominal thickness of wall. 3/16 inch wall tie double eye sections welded at 16 inches o.c. extended as required for insulation thickness. Pre fab corners and tees shall be used at all wall corners and intersections. Dur-O-Wal "Dur-O-Eye", or Architect approved equal.
 5. At Masonry Anchored to Steel Spandrel Beam and Columns: Hot-dipped galvanized, No. 315 Anchor and No. 316 Pintle Tie manufactured by Heckmann Building Products, Inc., or Architect approved equal. Anchors detailed on Structural Drawings supersede.
 6. At Veneer Brick Anchored to Light Gauge Steel Framing: Hot-dipped galvanized, No. 75HE Pos-i-Tie System utilizing self-tapping screw for steel studs with 5/8 inch barrel length, and 4 inch triangle wire tie for 2 inch cavity manufactured by Heckmann Building Products, Inc., or Architect approved equal. Anchors detailed on structural drawings supersede. Attachment screws shall be corrosion resistant type as recommended by manufacturer to suit application. Adjust wire tie size as required to conform with cavity depth if other than 2 inch.
 7. Control Joint Anchor: Equal to Heckmann Building Products, Inc. No. 351 Anchor.
- G. Miscellaneous Materials: (As shown or required)
 1. Reinforcing Steel: ASTM A615, Grade 60.
 2. Forms: Form grade plywood with wood studs and wales as required.
 3. Shores: Patented shores of design and manufacture sufficient to safely support imposed loads.
 4. Premolded Filler: Fibrous mastic strips containing 35 percent to 50 percent asphaltic impregnation, ASTM D1751.

5. Flashing Cement: "Nervaplast" cold setting mastic manufactured by Nervastral, Inc., or Architect approved equal.
6. Building Felt: No. 15 asphalt saturated felt, ASTM D226.
7. Dovetail Anchors: 16 gauge galvanized dovetail corrugated masonry anchor, 1 inch x 3-1/2 inch manufactured by AA Wire Products Co., Heckman Building Products, Inc., Dur-O-Wal, Inc., Hohmann & Barnard, Inc., Masonry Reinforcing Corporation of America, or Architect approved equal.
8. Steel Shapes and Plates: As shown on drawings and specified in Section 05 50 00, Miscellaneous Metals.
9. Headed Stud Anchor: Welded by full-fusion process as furnished by TRW Nelson Stud Welding Division, or Architect approved equal.
10. Bolts: ASTM A307. Furnish with carbon steel washers.
11. Deformed Bar Anchors: Welded by full-fusion process as furnished by TRW Nelson Stud Welding Division, or Architect approved equal.
12. Reinforcing Bars to be Welded: ASTM A706.
13. Cavity Drainage Protection: 2 inch thick by 10 inch high by 5 feet long recycled polyester/ polyethylene mesh, trapezoidal-shaped, continuous at foundation, at heads above openings, and shelf angles as indicated on drawings. Provide Mortar Net™ manufactured by Mortar Net USA, Ltd., Gary, IN; (800) 664-6638, or Architect approved equal.
14. Masonry Color: Iron oxide pigment conforming to ASTM C979 in color(s) selected by Architect, shall be inert, stable to atmospheric conditions, sunfast, weather resistant, alkali resistant, water insoluble, and free of fillers and extenders, as manufactured by ChemSystems, Inc., Davis Colors, Solomon Grind-Chem Service, Inc., or Architect approved equal.
15. Weep Hole Vents: Brick Vent as manufactured by Williams Products, Inc. consisting of Injection molded PVC designed to fit in head joint in an offset "T" shape, allowing air to pass in and water to weep out. Weep hole vents shall be sized to match masonry (may require custom sizing).

2.3 MASONRY STRENGTH

- A. Ultimate compressive strength of masonry as required by design and determined by prism tests shall not be less than 1,800 psi, unless stated otherwise in Structural Drawings.

PART 3 - EXECUTION

3.1 FORMS AND SHORES

- A. Provide forms and shores sufficiently strong and rigid as required to support soffits, beams, and lintels during construction.
- B. Build forms to conform to shape, line, and dimension of masonry members as detailed, substantial and sufficiently tight to prevent leakage of mortar, grout or concrete. Properly brace or tie together so as to maintain position and shape.

3.2 PREPARATION OF MATERIALS

- A. Concrete Masonry Units:
 1. Where cutting is required, masonry shall be cut with a sharp masonry saw.
 2. Ensure concrete masonry units to receive sand fill are ready for filling and cutouts are protected from material spillage.
- B. Brickwork: Dampen brick before laying in a manner consistent with the nature of the brick, the mortar, and the weather conditions.

- C. Mortar and Grout:
 - 1. Use suitable containers for material measurement. Measuring sand by the shovel is not acceptable.
 - 2. Thoroughly machine mix a minimum of five (5) minutes after all materials are in mixer.
 - 3. Consistency will completely fill all spaces intended to receive grout.
 - 4. Use within 2-1/2 hours of initial mixing.
 - 5. Mortar or grout shall not be used if curing has progressed to yield a stiff consistency.
- D. Reinforcement:
 - 1. Reinforcement shall be free from loose rust and other coatings that would reduce the bond.
 - 2. Cut accurately to length and bend by such methods as will prevent injury to the material.
 - 3. Straighten out kinks or bends.
- E. Flashing:
 - 1. Locations: Install in exterior walls to divert moisture within walls to exterior surfaces.
 - 2. Bed Joints: Coordinate work with Division 4, Masonry. Install flashings between two (2) thin layers of masonry mortar without increasing thickness of mortar joint. Keep outer edge of flashing material ½ inch from exterior face of masonry.
 - 3. Adjacent Work: Protect work by masking, covering, or other precautionary methods. Remove protection when no longer necessary.
 - 4. Separate thru-wall flashing from dissimilar materials.
 - 5. Protect membrane flashing from overexposure to direct sunlight.

3.3 INSTALLATION

- A. General:
 - 1. Do not use chipped or cracked concrete masonry units (CMU) and face brick, where exposed to view.
 - 2. Use masonry saws to cut and fit exposed units.
 - 3. Exposed masonry at exterior corners shall be solid units.
 - 4. Clean surface of masonry smooth and free from projections which might puncture or otherwise damage flashing material.
 - 5. Place thru-wall flashing as follows:
 - a. Place on bed of mortar and cover with mortar.
 - b. Provide at steel columns and beams in exterior masonry walls and elsewhere as indicated on the drawings or required.
 - c. Install asphalt laminated membrane as base flashing at all exterior cavity walls below weep holes.
 - d. Install at material transitions inside exterior cavity walls, roof edge/exterior wall transitions, masonry joints (control/expansion) inside exterior cavity walls, exterior wall sill/weep conditions, exterior door and window frame perimeters, roof deck/exterior wall transitions, exterior wall penetrations (i.e. pipe, conduit, ducts, etc.). Provide membrane at all joints, holes, gaps or openings to ensure a continuously sealed building envelope.
 - 6. Lay masonry units plumb, true to line, and with level courses accurately spaced within allowable tolerances.
 - 7. Do not furrow bed joints.
 - 8. Stop off horizontal run by racking back in each course; toothing is not permitted.
 - 9. Adjust units to final position while mortar is soft and plastic.

10. If units are displaced after mortar has stiffened, remove, clean joints and units and re-lay with fresh mortar.
11. When joining fresh masonry to set or partially set masonry:
 - a. Remove loose masonry units and mortar
 - b. Clean and lightly wet exposed surface of set masonry prior to laying fresh mortar.
- B. Metal Door Frames: Fill jamb frames solid with mortar. Build in anchors.
- C. Lintels and Bond Beams: Provide reinforced unit type, except where steel lintels are shown. Use reinforcing bars as shown on the drawings. Completely fill in lintel block and bond beams with grout. Provide a minimum of 8 inch bearing at end of lintels.
- D. Corners: Connect corners with No. 9 galvanized wire or corrugated tie using one tie for each 4 inches of nominal wall thickness.
- E. Partition Tops: Allow space at top of horizontal spanning walls for compressible joint back-up and sealant as specified in Sealant section. Anchor top of walls to deck or structure.
- F. Mortar Beds:
 1. Place mortar in a manner which will result in the development of adequate bond between the masonry and the reinforcement.
 2. Lay units with full mortar coverage on horizontal and vertical joints in all courses.
 3. Provide sufficient mortar on ends of masonry unit to fill head joints.
 4. Rock closures into place with head joints thrown against two adjacent masonry units in place.
 5. Do not pound corners or jambs to fit stretcher units after setting in place.
 6. Where adjustment to corners or jambs must be made after mortar has started to set, remove mortar and replace with fresh mortar.
- G. Mortar Joints and Patterns:
 1. Lay CMU in running one-half (1/2) bond pattern, unless noted otherwise.
 2. Lay brick in running one-third (1/3) bond pattern, unless noted otherwise on drawings. Refer to drawings for accent coursing.
 3. Provide flush joints where concealed from view and where dampproofing is scheduled.
 4. Provide standard concave tooled joint where masonry is exposed to view for brick and CMU, typically.
 5. All mortar joints to be of consistent size.
 6. Provide soldier courses where indicated, refer to the elevations.
 7. All horizontal joints shall be concave tooled joint at face of units, unless noted otherwise.
- H. Reinforcement, Anchor and Tie Systems:
 1. General:
 - a. Completely embedded in mortar or grout.
 - b. All reinforcement consisting of bars or wire 1/4 inch or less in diameter embedded in the horizontal mortar joints shall have no less than 5/8 inch mortar coverage from the exposed face.
 - c. Where modular brick is used with brick coursing at 16 inches on center, provide ladder reinforcing within each wythe at 16 inches o.c. vertically for exterior wythe and back-up wythe, whether detailed or not. For other than modular brick, refer to Paragraph h. below.
 - d. Veneer anchors at exterior sheathed covered metal stud exterior walls shall be attached on outside face of sheathing using cadmium plated sheet metal screws. Spacing shall be same as stud spacing o.c. horizontally and 16 inches o.c. vertically.

- e. Veneer anchors at Interior brick walls with metal stud back-up shall be the same as Paragraph "d" above, except anchors shall be attached directly to metal stud with recommended corrosion resistant fasteners in accordance with manufacturer's recommendations.
 - f. At intersection of all perpendicular masonry walls provide two (2) vertical rows of ladder type reinforcing at 16 inches o.c. vertically.
 - g. Weld veneer anchors to structural steel in accordance with manufacturer's recommendations. Touch-up steel shop paint and galvanized coating on anchor with proper touch-up paint to match damaged coating in accordance with manufacturer's recommendations.
 - h. In cavity walls with CMU back-up, embed truss type horizontal reinforcement with integral adjustable pintle wall ties every 16 inches o.c. vertically.
 - i. Splices in reinforcement: Splices may be made only at such points and in such manner that the structural strength of the member will not be reduced. Lapped splices shall be eight (8) inches. Welded or mechanical connection shall develop the strength of the reinforcement.
 - j. Corrugated strap ties shall not be used as veneer anchors at exterior or where subject to moisture. Their use in interior, dry conditions are acceptable.
 - k. Place joint reinforcement in the first two (2) bed joints above and the first two (2) bed joints below masonry openings. Extend extra reinforcing two (2) feet beyond jambs.
 - l. Provide masonry ties at floor and roof decks as indicated.
- I. Flashing:
- 1. Follow manufacturer's instructions for mechanically fastened installation with a termination bar.
 - 2. Application Guidelines - Install flashing at the following locations:
 - a. Membrane Flashing: material transitions inside exterior cavity walls, roof edge/exterior wall transitions, masonry joints (control/expansion) inside exterior cavity walls, exterior door and window frame perimeters, roof deck/exterior wall transitions, exterior wall penetrations (i.e. pipe, conduit, ducts, etc.). Provide membrane at all joints, holes, gaps, or openings to ensure a continuously sealed building envelope. Utilize primer on substrates as instructed by manufacturer.
 - b. Tamko TW thru-wall Flashing: At all horizontal wall flashing, including (but not limited to) exterior wall sill/weep conditions, exterior door and window head/weep conditions, masonry wall cap flashing and masonry wall base flashing.
 - 3. Apply substrate primer as instructed by membrane manufacturer to suit condition.
 - 4. Provide drip edge flashing at weep conditions with membrane flashing. Cut membrane flush with outside edge of brick over top of drip edge flashing to alleviate exposure to UV degradation and deterioration of asphalt membrane.
 - 5. On Horizontal Surfaces: The flashing shall be laid in a slurry of fresh mortar and topped with a fresh full bed of mortar. The flashing shall be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Flashing shall be carried through the wall, turned up where possible to facilitate drainage through the weepholes, then carried upward across the cavity a minimum of six (6) inches. Flashing will then be secured in back wall with termination bar.
 - 6. On Vertical Surfaces: Surfaces receiving the flashing shall be sufficiently spotted with asphalt mastic to hold in place until masonry is set. Secure in back wall with termination bar.
 - 7. Foundation Sill Dampproofing: The flashing for foundation sills shall be laid in a slurry of fresh mortar and topped with a fresh full bed of mortar. The flashing shall

- be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Flashing shall be sloped across the cavity and turned up the wall a minimum of ten (10) inches and secured to back wall with termination bar. Where sill and column meet, flashing shall be brought up a minimum of ten (10) inches up the column.
8. Thru-Wall Flashing: Shall be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Carry flashing through the wall, turned up where possible to facilitate drainage through the weepholes, then carried upward across the cavity a minimum of six (6) inches, unless noted otherwise, and secure in back wall with termination bar.
 9. Cavity Wall: Flashing shall be laid in a slurry of fresh mortar and topped with a fresh full bed of mortar. Flashing shall be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Flashing shall be carried through the wall and upward across the cavity a minimum of six (6) inches, unless noted otherwise, and secured in the back wall with termination bar. Vertical membrane joints shall be secured with termination bar as instructed by membrane manufacturer.
 10. Heads and Sills: Flashing for heads and sills shall be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Flashing shall be carried through the wall and upward across the cavity a minimum of six (6) inches, unless noted otherwise. Head flashing shall be carried six (6) inches beyond both end of the steel lintel. Both head and sill flashing shall be turned up at the sides to form a pan. All corners shall be folded, NOT CUT. Install weepholes.
 11. Spandrels: Spandrel flashing shall start from the outside toe of the shelf angle, go up the face of the beam and then through the wall, turned up on the inside not less than two (2) inches. Install weepholes.
 12. Parapet or Coping: Flashing for parapets or coping sills shall be laid in a slurry of fresh mortar and topped with a fresh full bed of mortar. Flashing shall be cut flush with the exterior face of the wall after being left exposed for inspection purposes only. Weepholes shall be installed immediately on top of the flashing.
 13. Lengths: Install flashings without longitudinal joints within walls, if possible. If required materials are not available in a single width, join by lapping material minimum two (2) inches and seal joint throughout its length with adhesive.
 14. End Joints: Avoid end joints in flashing. When end joints are necessary, lap flashing minimum six (6) inches and seal joint continuously with adhesive.
 15. Penetrations: Where anchors, pipes, and inserts penetrate flashing, make opening in flashing snug and seal with adhesive.
 16. Reglet Termination: Insert wedge into place and seal carefully with adhesive
 17. Termination Bar: Install flashing with termination bars in accordance with manufacturer's instructions. Provide 3 coursing at all termination bars, typical.
 18. Top Coat: After flashing material is in place (except in masonry joints where bond and mortar is required) trowel full 1/8 inch protective coating or mastic on all flashing faces.
- J. Laying Masonry: Lay units plumb, level, and true to line with full head and bed joints. Butter ends of masonry with sufficient mortar to fill head joints. Do not furrow bed joints. Slope top of bed joint toward center of wall to minimize amount of mortar forced into grout space. Remove mortar, protruding from joints into grout space, before pouring grout.
- K. Reinforcing Bars:
1. Hold vertical bars in position at top and bottom and at intervals not exceeding eight 8 feet-0 inches with a minimum clearance of 1/4 inch from masonry and not less than one (1) bar diameter between bars.

2. When a foundation dowel is not in alignment with a vertical block cell or pilaster, slope it not more than one (1) horizontal in six (6) vertical to bring it into proper alignment before grouting.
 3. Place horizontal reinforcing bars in continuous masonry courses, consisting of bond-beam or trough block units, and solidly grout in place.
 4. Use straight reinforcing bars except for bends around corners and where bends or hooks are detailed on plans.
 5. Lap reinforcing steel 40 bar diameters minimum where spliced and wire together.
- L. Grouting: Where detailed place grout in reinforced masonry beams, walls, columns, and pilasters. All cells and spaces containing reinforcing bars shall be filled with grout. Wherever possible grouting shall be done from inside face of masonry. Exercise extreme care to prevent grout from staining face of masonry. Immediately remove any spilled grout from face and top of masonry.
1. Prior to grouting clean space so that all spaces to be filled with grout do not contain mortar projections greater than 1/2 inch, mortar droppings or other foreign material. Grout shall be placed so all spaces designated to be grouted shall be filled with grout and grout shall be confined to those specific spaces.
 2. Grout materials and water content shall be controlled to provide adequate fluidity for placement, without segregation of constituents and shall be mixed thoroughly.
 3. Between grout pours a horizontal construction joint shall be formed by stopping all wythes at the same elevation and with grout stopping a minimum of 1-1/2 inches below a mortar joint, except at top of wall. Where bond beams occur, stop grout pour a minimum of 1/2 inch below top of masonry.
 4. Reinforcement shall be placed prior to grouting. Bolts shall be accurately set with templates or by approved equivalent means and held in place to prevent movement.
 5. Segregation of grout materials and damage to masonry shall be avoided during the grouting process. Adequately brace masonry to prevent displacement or cracking during grouting operations.
 6. Grout shall be consolidated by mechanical vibrator during placing, before loss of plasticity, in a manner to fill grout space. Grout pours greater than 12 inches shall be reconsolidated by mechanical vibration to minimize voids due to water loss. Grout pours 12 inches or less in height shall be mechanically vibrated, or puddled.
 7. Grout shall not be handled nor pumped utilizing aluminum equipment.
 8. Size and height limitations of grout space or cell shall be as follows:

GROUT TYPE	GROUT POUR MAX. HEIGHT (FEET)	LEAST CLEAR DIMENSIONS		CLEANOUTS REQUIRED
		Width of Grout Space (In.)	CMU Cell Dim. Dims. (In. x In.)	
Fine	1	3/4	1-1/2 x 2	No
Fine	5	1-1/2	1-1/2 x 2	No
Fine	8	1-1/2	1-1/2 x 3	Yes
Coarse	1	1-1/2	1-1/2 x 3	No
Coarse	5	2	2-1/2 x 3	No
Coarse	8	2	3 x 3	Yes

- a. Clear dimension is the cell or grout space width less mortar projections.
 - b. Grout space width shall be increased by the horizontal projection of the diameters of horizontal bars within the cross section of the grout space.
9. Place grout in lifts not exceeding 8 feet-0 inches.

- M. Concreting: Supervise placing of concrete in cores of masonry beams and lintels and over masonry soffits where structural concrete is detailed. Report discrepancies or procedures which may adversely affect performance of masonry work.
- N. Brick Weepholes:
1. Provide weepholes above all thru-wall flashings where weepholes occur at the base of the wall. The mason shall coordinate the location of the thru-wall flashings with the elevation of the sidewalks and planting beds on the civil engineering drawings. Both weepholes and thru-wall flashings shall be above the first course of brick above the sidewalks and planting beds. Pay particular attention to areas near exterior doors.
 2. Ensure cavity drainage protection is properly installed.
 3. Leave head joint free and clean of mortar.
 4. Spacing: 24 inches on center maximum for modular brick and block, unless shown otherwise.
 5. Keep weepholes and area above flashing free of mortar droppings.
 6. Coordinate weep holes to be located above sidewalks and paving.
- O. Sealant Joints:
1. Allow for sealant joints around outside perimeters of exterior doors, window frames and other wall openings.
 2. Uniform depth: 3/4 inch.
 3. Uniform width: As shown on the drawings but not less than 1/4 inch.
 4. Provide sample for Architect's approval.
 5. Refers to drawing for locations and details of accent joints.
- P. Movement Joints (Expansion Joints and Control Joints):
1. Locate expansion and control joints as shown on drawings, or if not shown, comply with the following:
 - a. General:
 - 1) Vertical expansion joints shall be placed in the brick wythe and control joints shall be placed in the concrete masonry wythe, although they do not necessarily have to be aligned.
 - 2) Mortar and joint reinforcement shall not bridge brick movement joints.
 - 3) Mortar joints which stop at the expansion joint cavity shall be struck flush with the masonry unit, producing a continuous flat surface for the sealant to adhere to.
 - b. Vertical Expansion Joints:
 - 1) Locate expansion joints on long straight walls without openings maximum 25 feet-0 inches.
 - 2) Locate expansion joints at the corner of walls perpendicular to one another. In instances, where the joint is not desired at the corner, the expansion joint shall be located within 10 feet-0 inches of the corner in either wall, but not necessarily both. The spacing of expansion joints around a corner shall not exceed the spacing of expansion joints in a straight wall. For example, if the spacing between expansion joints on a straight wall is 25 feet-0 inches, then the spacing of expansion joints around a corner could be 10 feet-0 inches on one side of the corner and 15 feet-0 inches on the other side. Joint reinforcement may be added around wall corners to provide added tensile strength to the corner, but joint reinforcement shall not bridge the expansion joint.
 - c. Offsets and Setbacks:

- 1) Locate expansion joints at 10 feet-0 inches maximum on one side of the offset or setback. The spacing of expansion joints around an offset or setback shall not exceed the spacing of expansion joints in a straight wall. See expansion joints at corners of perpendicular walls to one another above for example of spacing.
- d. Openings (Doors and Windows):
- 1) Locate vertical expansion joints along the edge or jamb of the opening of windows and doors. Single opening windows and doors under 6 feet-0 inches in width shall have expansion joint on one (1) side of the edge or jamb of the opening as determined by the Architect, unless shown otherwise on drawings. Windows and doors 6 feet-0 inches and over in width shall have expansion joints on both sides of the edge or jamb of the opening.
 - 2) Where masonry above an opening is supported by shelf angles attached to the structure, a vertical expansion joint shall be located alongside the opening, continuing through the horizontal support.
 - 3) Where masonry above the opening is supported by loose lintels (unattached to the structure), special detailing and construction is required. If the expansion joint runs along side the opening, the loose steel lintel shall be allowed to expand independently of the masonry. To accomplish this, form a slip plane with flashing located above and below the angle. A backer rod and sealant shall be installed in front of the toe of the angle, and space shall be left at the end of the angle. Thus, a pocket will be formed which will allow movement of the steel angle within the brickwork. If the joint cannot be built in this manner, then the vertical expansion joint shall not be located alongside the opening, but rather, with Architect's prior approval, the joint shall be located halfway between the openings.
- e. Intersections and Junctions:
- 1) Locate expansion joints at intersections of masonry walls and walls which serve different functions. If the masonry is not required to be bonded at the intersection, an expansion joint shall be incorporated. Walls which intersect at other than right angles are also vulnerable to cracking at the intersection.
 - 2) Locate expansion joint to separate adjacent walls of different heights to avoid differential movement, especially if the difference is very large.
- f. Parapets:
- 1) All vertical expansion joints shall be carried through the parapets.
 - 2) Additional expansion joints shall be halfway between those running full height, unless the parapet is reinforced. These additional expansion joints shall continue down to a horizontal expansion joint, or continue to the base of the wall.
- g. Horizontal Expansion Joints:
- 1) Locate horizontal expansion joints at shelf angles supporting brick masonry.
- h. Control Joints:
- 1) Locate CMU control joints directly over concrete slab control joints.
 - 2) Whenever possible, lay out CMU so that control joint will coincide with CMU module (25 feet-0 inch maximum spacing between control joints), unless noted otherwise on drawings.

- 3) Locate control joints at structural columns to isolate movement from continuing or intersecting walls and columns.
- 4) Install backer rod and sealant in accordance with manufacturer's instructions.

3.4 ALLOWABLE TOLERANCES

- A. Maximum Variation from Plumb:
 1. In lines and surfaces of columns, walls and at rises:
 - a. 1/4 inch in 10 feet (1:480)
 - b. 3/8 inch in 20 feet (maximum)
 - c. 1/2 inch in 40 feet (1:960)
 - d. For external corners, expansion joints and other conspicuous lines:
 - e. 1/4 inch in 20 feet (maximum)
 - f. 1/2 inch in 40 feet (1:960)
- B. Maximum variation from level:
 1. 1/4 inch in any bay or 20 feet
 2. 1/2 inch in 40 feet (1:960)

3.5 REMOVAL OF FORMS AND SHORES

- A. Do not remove shores and forms under reinforced masonry beams, lintels, and soffits until members have hardened sufficiently to carry their own weight and other super imposed loads. Providing that sufficient curing has taken place, leave forms and shores in place as follows:
 1. Beam and lintels: Minimum ten (10) days.
- B. Allow 16 hours to elapse after completion of masonry columns and walls before placing floor or roof construction loads on them. Allow an additional 48 hours before applying concentrated loads such as trusses, girders, and beams.

3.6 REPAIRING, POINTING AND CLEANING

- A. All holes in exposed masonry shall be pointed, and defective joints shall be cut out and re-pointed with mortar.

3.7 REPAIR OR REPLACEMENT OF DAMAGED WORK

- A. Imperfect or damaged work, or any material damaged or determined to be defective before final completion and acceptance of the entire job, shall be replaced at Contractor's expense and in conformity with all requirements of drawings and specifications to the satisfaction of the Owner and Architect. Removal and replacement of masonry work shall be performed in such a manner as not to impair the appearance or strength of the structure in any way.

3.8 CLEAN-UP AND PROTECTION

- A. Clean up all debris caused by work of this Section, keeping the area clean and neat at all times.
- B. Cover all unfinished work at night against the elements with plastic sheeting, building paper, heavy canvas or other material approved by Architect to prevent water from entering cavities.

- C. Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

3.9 FIELD QUALITY CONTROL AND TESTING

- A. Inspection and Testing Laboratory services shall be in accordance with Section 01 45 23, Testing and Inspecting Services.

END OF SECTION

SECTION 05 50 00 - METAL FABRICATIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

- A. Miscellaneous metal items and their related components which are not necessarily individually described shall be furnished and installed in accordance with the intent of the drawings and specifications and as required to complete the work.
- B. The Work of this Section is governed by Section 05 12 00, Structural Steel, except where more stringent requirements are contained herein or on the Structural Drawings. If a conflict exists, notations on the Structural Drawings take precedence.

1.3 REFERENCES

- A. Conform to the following reference standards as applicable to the work:
 - 1. American Institute of Steel Construction (AISC), Code of Standard Practice for Steel Buildings and Bridges, latest edition.
 - 2. American Institute of Steel Construction (AISC), Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings, latest edition.
 - 3. American Iron and Steel Institute (AISI)
 - 4. ASTM International (ASTM)
 - a. A36, Standard Specification for Carbon Structural Steel
 - b. A108, Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished
 - c. A123, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - d. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings
 - e. A307, Standard Specification for Carbon Steel Bolts and Studs 60,000 psi Tensile Strength
 - f. B209, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
 - g. B210, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes
 - h. B221, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
 - 5. American Welding Society (AWS)
 - a. D1.1 Structural Welding Code
 - 6. Steel Structures Painting Council (SSPC)
 - a. Painting Manual, Volume 1, Good Painting Practice
 - b. Painting Manual, Volume 2, Systems Specifications
 - 7. National Ornamental & Miscellaneous Metals Association (NOMMA)
 - a. Guideline 1 – Joint Finishes.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. For off-the-shelf items: Show all layouts, sizes, methods of construction and installation, including sizes and types of all fastening devices.

2. For custom fabricated items: Submit design calculations for the materials and their connections designed by the Contractor, prior to or with the shop drawings. Calculations shall bear the seal of a Registered Professional Engineer, licensed in the State of Texas. Shop drawings containing connections for which calculations have not been received will be returned unchecked as an incomplete submittal. Design Calculations will be retained for the Architect's file, and will not be approved or returned.

B. Samples: As noted.

1.5 CONTRACTOR'S RESPONSIBILITIES

- A. As scope and performance documents, the Drawings and Specifications do not necessarily indicate or describe all the work required for the performance and completion of the Work. Contracts will be let on the basis of such documents with the understanding that the Contractor shall furnish and install the items required for proper completion of the Work without adjustment to price or schedule. Work shall be of sound, quality construction and the Contractor shall be solely responsible for the inclusions of adequate labor and materials to cover the proper and timely fabrication and installation of the miscellaneous metal items indicated, described, or implied.
- B. As a performance specification, the criteria for the solution of structurally sound miscellaneous metal items indicated on the Drawings or specified herein are the sole purpose of defining the design intent and performance requirements. The details shown are intended to emphasize the acceptable profiles and performance requirements for this Project. To avoid any misunderstanding or lack of interpretation, the Contractor is hereby advised that the responsibility for the miscellaneous metal items are totally his and that designs and resolutions proposed in the Contractor's shop drawings, structural calculations, and related documentation shall be demonstrated throughout the Work and warranty period specified or required.
- C. Design proposal submissions which follow exactly the details indicated on the Drawings, will not relieve the Contractor of his responsibility for the design, fabrication, erection, or performance of the Work of this Section.
- D. In the event of a controversy over the design, the decision of the Architect will take precedence.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Structural Steel: Comply with ASTM A36.
- B. Welding:
 1. Comply with American Welding Society (AWS) Code.
 2. Comply with National Ornamental & Miscellaneous Metals Association (NOMMA Guideline 1: Joint Finishes) for joint finishes in the following locations:
 - a. Finish #1: Interior handrails and guardrails
 - b. Finish #2: Typical ornamental metals exposed to view, interior and exterior, except as indicated above. (canopies, exterior railings and guardrails, non-accessible sculptural fabricated metal, etc.)
 - c. Finish #3: Miscellaneous metals exposed interior non-public spaces, and exterior miscellaneous metals, except as indicated above. (ladders, bollards, etc.)

- d. Concealed welding: no requirement, unless otherwise indicated or required for safety or conformance with requirements of other portions of the work.
- C. Bolts:
- 1. Comply with ASTM A307.
 - 2. Size: 3/4 inch, unless otherwise noted.
- D. Anchors:
- 1. Expansion bolts:
 - a. 1/4 inch or less, Rawl Calk-Ins or Arrow Series 4000.
 - b. Greater than 1/4 inch: Rawl Multi-Calks. Top shall be 1/2 inch below concrete surface.
 - 2. Molly screw anchors:
 - a. In walls 1/16 inch to 5/8 inch thick, use "S" length
 - b. In walls 5/8 inch to 1/4 inch thick, use "L" length
 - c. In walls 1-1/4 inch to 1-3/4 inch thick, use "XL": length.
 - 3. Nelson stud anchors:
 - a. Comply with ASTM A108.
 - b. Concrete Embed: Headed, low carbon steel, non-threaded, galvanized, standard ferrule as required
- E. Shop Priming:
- 1. Shop coat any ungalvanized ferrous metal with primer, except for those to receive application of spray-applied fireproofing shall be free of primer and paint.
 - 2. Clean iron and metal to be primed of scale, dirt and dust by steel scrapers, wire brushers or sandblasting. Remove oil and grease with petroleum naphtha.
 - 3. Thoroughly work paint into all joints by brush. Overall application of brush or spray coat of red oxide primer in accordance with SSPC - Paint 25.
 - 4. Give any painted built-in portions one field coat of primer on all abraded parts after installation.
- F. Galvanized Metal:
- 1. Comply with ASTM A123.
 - 2. General: Galvanize all steel sections which are fully or partially exposed to weather, regardless if they are scheduled to receive a finish coat of paint or not.
 - 3. Galvanized items to be painted shall be primed as outlined in Painting and Staining Section.
 - 4. Hot-dip galvanized after fabrication.
 - 5. Silicone protective coating shall not be used at galvanized items scheduled to receive paint.
 - 6. Galvanizing Repair Paint: ZRC cold galvanizing compound or Galviline manufactured by ZRC Worldwide, Marshfield, MA; Galvax Zinc-rich Cold Galvanizing Coating manufactured by Alvin Products, Inc., Lawrence, MA; or paint complying with military specification MILP-21035A, Type I or II. Apply repair paint in accordance with ASTM A780.
- G. Stainless Steel:
- 1. General: Comply with ASTM Standards as applicable to the work.
 - 2. Type: Type 302 or 304 as applicable to the work.
 - 3. Finish:
 - a. Concealed: No. 2D finish
 - b. Exposed: No. 4, unless noted otherwise.
- H. Aluminum:
- 1. General: Comply with ASTM Standards as applicable to work.
 - 2. Type: 6061 or 6063 as applicable to work.

3. Finish:
 - a. Concealed: Mill finish
 - b. Exposed: Mill finish, or Anodized or Kynar 500 or Hylar 5000 finish a specified in color selected by Architect from manufacturer's standard colors.

2.2 MISCELLANEOUS METAL ITEMS

- A. The following is a list of the principal miscellaneous metal items to be furnished under this Section. This list is offered only as a guide and Contractor shall thoroughly check drawings for other miscellaneous metals. All items exposed to the exterior shall be hot-dip galvanized after fabrication.
 1. Steel Ladders: Fabricate from 2-1/2 inch by 3/8 inch flat bar steel stringer with 3/4 inch steel rod rungs let into stringers, welded and ground smooth. Provide all angle supports and anchoring devices for bolting to wall, floor, or structure as required. Hot-dip galvanize after fabrication.
 2. Aluminum Ladders: Fabricate from 6061-T6 aluminum. Provide all angle supports and anchoring devices for bolting to wall, floor, or structure as required
- B. Downspout Boots: kinetic architectural products
 1. Construction to be 1/8" aluminum (6063-T52) powder coated by electric gun with DFT of 2.0-4.0mils with 5 year warranty.
- C. Other Miscellaneous Items: Miscellaneous metal items and their related components are not necessarily individually described. Miscellaneous items not described shall be furnished and installed in accordance with the intent of the drawings and specifications and as required to complete the work.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Separate all dissimilar metals.
- B. Welded Joint Finishes: Where welding is exposed to view, welds shall be executed neatly then ground smooth. Pits and blemishes are not acceptable. Provide joints as stated above in accordance with NOMMA Guideline 1.
- C. For manufactured items, adhere to printed manufacturer's installation instructions.
- D. Refer to painting section for items that are to receive paint.

END OF SECTION

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 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, including but not limited to casework, TV mounts, marker boards, metal shelving, toilet partitions, toilet accessories and window blinds, door strikes, wall stops, wall panels.
 2. Wood cants, nailers, curbs, and other items associated with roofing work.
 3. Miscellaneous framing items and plywood sheathing.

1.3 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.

1.4 SUBMITTALS

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

1.5 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. 3/4 inch thick unless required or shown otherwise. Paint per 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.
 6. APA C-D, Interior DFPA grade-use at mechanical rooms, electrical closets, etc, where wall mounted panels are required for equipment.
- 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: AWPA P5.
 - 2) Structural Lumber Treatment Standard: AWPA C31.
 - 3) Plywood Treatment Standard: AWPA 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.
 - 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 AWPA 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 AWPA 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. Wood blocking for wall mounted accessories to be fire retardant.
 3. Steel plate installed at location of door hardware impact, 12 inch x 12 inch, where hardware could strike wall. Refer to Division 5.
 4. All interior wood blocking shall be fire resistant.
 5. All interior wood blocking shall be exterior grade fire resistant.
 6. Spiking and nailing shall be done using largest size spikes and nail practicable.
 7. 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.
 8. 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.
 9. Provide blocking, bucks and framing as necessary and for other trades as required.
 10. Drill lumber accurately for bolts and fit all bolts with suitable washers.
 11. Perimeter wood blocking to be attached 2'-0" staggered with 1/2" galvanized bolts through both nailers.
 12. 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 06 10 00

SECTION 07 42 16 - METAL WALL AND SOFFIT PANELS

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

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Section 07 62 00 – Sheet Metal Flashing and Trim
- B. Section 07 92 00 - Joint Sealants

1.2 DELIVERY AND STORAGE

- A. All panels shall be delivered with appropriate packaging to provide protection against transportation damage. Materials damaged in shipping or storage shall not be used.
- B. Store all materials and accessories above ground on well-skidded platforms. Store under waterproof covering. Provide proper ventilation to panels to prevent condensation build-up between panels.

1.3 COORDINATION

- A. Coordinate work with installation of associated metal flashings and manufactured roof panels.

1.4 WARRANTY

- A. Provide a five (5) year contractors workmanship and water tightness warranty.
- B. Provide a manufacturer's twenty (20) year finish warranty.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wall Siding Panels: 24 Gauge galvalume panels
- B. Style: HR-16 by Berridge or similar with 16" coverage, a rib spacing of 4" and a panel depth of 7/8"
- C. Finish: factory-prefinished with an exterior surface of Kynar 500® or Hylar 500® based coating having a resin content consisting of at least 70 percent PVDF fluoropolymer resin content, in at least 1.0 mil thickness, in color(s) as selected by Owner; interior surface finish, manufacturer's standard.
- D. Soffit Panels: Vented thickness as recommended by Manufacturer of wall panels, aluminum. Manufacturer shall be the same as wall panel manufacturer.
- E. Accessories:
 - 1. Hat Channel: 16 gauge minimum thickness galvanized steel, ½" inch rise, or as required to align with existing conditions.
 - 2. Sub-Girt Fasteners: Stainless Steel screws to meet application.
 - 3. Concealed Fasteners: Stainless Steel screws supplied or recommended by panel manufacturer to suit application.

4. Polyisocyanurate Insulation: Shall comply with NFPA 285 and ASTM E2357 and E331. Thickness shall be 2".
5. Metal Trim at Siding Panels: 0.040 inch thick prefinished aluminum sheet matching finish type and color of siding panels.
6. Closures: 0.040 inch thick prefinished aluminum sheet matching finish type and color of siding panels.
7. Separate dissimilar metals with asphalt-saturated building felt or a bituminous coating to prevent galvanic action.
8. Waterproofing Membrane: 40 mil thick SBS modified bituminous product of self-adhering type with non-stick surface conforming to "Carlisle WIP 300HT" manufactured by Carlisle, or Architect approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine metal frame to insure it is prepared to receive siding.
- B. Ensure substrates are flat, free from objectionable warp, wave and buckle
- C. Install 16 gauge zees 2'-0".

3.2 INSTALLATION OF SIDING PANELS

- A. Install hat channels at maximum 16 inches on center (vertical max.) to satisfy local building code, at least three per panel length. Fasten to wall with two fasteners at 16 inches on center max.
- B. Comply with manufacturer's instructions for assembly, installation and erection in order to achieve weathertight installation.
- C. Install waterproof membrane behind hat channel
- D. girts for unvented panels only. Seal all laps.
- E. Fasten siding panels along each zee-girt.
- F. Install closures and trim to form a complete installation.
- G. Install sheet metal flashings according to provisions of Section 07 62 00.

3.3 PROTECTION

- A. Protect roofing and siding from damage and discoloration.
- B. Repair damaged or discolored panels.

END OF SECTION

SECTION 07 52 19 - MODIFIED BITUMEN "COOL ROOF" MEMBRANE ROOFING SYSTEM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

- A. Providing coordination for the entire roofing assembly, including, but not limited to:
 - 1. Tapered edge strips, cant strips, and wood nailers. (Refer to this Section and Section 06 10 00)
 - 2. Modified bitumen membrane roofing
 - 3. Flashings, including sheet metal perimeter edge (fascia) (Refer this Section and Section 07 62 00).
 - 4. Work incidental to, the complete and proper installation of a watertight modified bitumen membrane roofing system as shown on the drawings or specified herein, and in accordance with all applicable requirements of the Contract Documents.
- B. It is the intent of this Section that the Work shall:
 - 1. provide a watertight facility;
 - 2. conform to all applicable building code requirements and of authorities having jurisdiction;
 - 3. include Section 07 62 00, Roof Related Sheet Metal as part of the Work of this Section; and be performed to obtain a single responsibility total system warranty.
- C. Work and materials hereinafter specified shall be best of kind described and, unless specified otherwise, shall be new and of best quality. All roofing materials utilized in performance of each type of work shall be the products of one (1) manufacturer or supplier.

1.3 RELATED WORK

- A. All Sections of Work relating to the roofing system, including mechanical, plumbing and electrical items penetrating the roof system.

1.4 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. C920, Standard Specification for Elastomeric Joint Sealants
 - 2. D41, Standard Specification for Asphalt Primer Used in Roofing, Damproofing, and Waterproofing
 - 3. D312, Standard Specification for Asphalt Used in Roofing
 - 4. D2178, Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
 - 5. D4479, Standard Specification for Asphalt Roof Coatings - Asbestos-Free
 - 6. D4586, Standard Specification for Asphalt Roof Cement, Asbestos-Free
 - 7. D4601, Standard Specification for Asphalt-Coated Glass Fiber Sheet Used in Roofing
 - 8. D5147, Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material

9. D4897, Standard Specification for Asphalt-Coated Glass-Fiber Venting Base Sheet Used in Roofing
 10. D6163, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements
- B. ASCE-7 Wind uplifts requirements for geographical area.
- C. Federal Specifications (FS)
1. SS-R-620B
 2. TT-S-00230C
- D. National Roofing Contractors Association (NRCA)
1. Roofing and Waterproofing Manual
- E. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
1. Architectural Sheet Metal Manual
- F. International Building Code
- G. Underwriters' Laboratories (UL)
1. Fire Hazards Classifications
- H. Texas Department of Insurances

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's printed instructions, schedules, charts, literature, and illustrations to indicate the performance, fabrication procedures, product variations, fastener pattern layout, and accessories to be used in the Work.
- B. Certifications:
1. Manufacturer's written certification that installer is approved and licensed to install specified roofing system.
 2. Manufacturer's affidavit that materials used in Project contain no asbestos.
 3. Installer shall submit resume and project experience list for proposed system for Project Manager and job site superintendent.
 4. Installer shall submit written certification that there are no undocumented workers being employed by them or by any subcontractor on this project and that all workers on this project are covered by workmen's compensation.
 5. Installer shall submit list of all subcontractors with evidence of subcontractor's insurance coverage in compliance with contract requirements.
 6. Manufacturer's written certification of approval / acceptance of these specifications and details.
 7. Warranty: Submit letter from manufacturer signed by agent authorized to do so, stating acceptance of warranty as specified and detailed.
- C. Referenced Standards: Two (2) copies of each referenced standard and retain approved copies at site.
- D. Shop Drawings: Furnish from copies of the manufacturer's literature or from copies of NRCA "Roofing and Waterproofing Manual", fourth edition.
1. Furnish for approval any proposed details which differ from those included with this proposal package. All proposed details shall first be approved in writing by roofing manufacturers prior to submitting to Architect for approval.

2. Furnish detail project sequencing, staging, material loading, manpower plans, and project construction schedule for approval.
- E. Samples:
1. Submit sample copy of job specific warranty that is to be issued upon project completion.
 2. Submit mock-up of all fabricated sheet metal items.
 3. Submit 12 inch x 12 inch sample of all types of roof membranes to be installed.
- F. Temperature Charts: Bitumen heating devices 24 hour temperature charts.
- G. Test Reports: Bitumen manufacturer's test reports relative to the following for each batch of bitumen furnished:
1. Softening Point: ASTM D312.
 2. Flashpoint: ASTM D92.
 3. Acceptable Bitumen Temperature: As recommended by the bitumen manufacturer and EVT label on containers.
 4. Thermometers: Two (2) hand held, "8F" thermometers complying with ASTM E1 to Architect for his checking kettle temperature.
- H. Upon Substantial Completion of Work, submit the following to Architect for his submission to Owner:
1. Manufacturer's Warranty: Manufacturer's written warranty as specified.
 2. Maintenance Procedures: Three (3) copies of manufacturer's printed instructions for Owner's use regarding care and maintenance of roof.

1.6 PROJECT CONDITIONS

- A. Weather Condition Limitations: Proceed with roofing work when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's recommendations and warranty requirements. Roofing application with moisture present will not be accepted. Do not attempt construction of the roofing system when the reported or calculated dew point are within three (3) degrees of each other
- B. Do not allow waste products, petroleum, grease, oil solvents, mineral oil, and other contaminants to come into contact with the roofing system before or during installation. Advise Owner if there is a possibility of his facility emitting such contaminants in the future.

1.7 INSPECTIONS / TESTS

- A. The Architect's and Manufacturer's representative shall at all times have access to the job site and work areas. The contractor will provide proper and safe facilities for such access and inspection.
1. Architect Inspections: The Architect will be providing periodic inspections throughout the duration of the project. Architect's Representative shall be required to inspect after completion of each major phase of construction for approval.
 2. Manufacturer Inspections:
 - a. An inspection shall be made by a representative of the material manufacturer at appropriate intervals during performance of Work to ensure that said project is installed in accordance with the manufacturer's specifications and illustrated details. Written reports by the manufacturer shall be turned over to the Architect, on each Monday following the prior week.
 - b. The authorized material manufacturer's field representative shall be responsible for:

- 1) Keeping the Architect's representative informed after periodic inspections as to the progress and quality of the work observed.
 - 2) Calling to the attention of the contractor those matters observed which are considered to be in violation of the contract requirements.
 - 3) Reporting to the Architect's representative, in writing, any failure or refusal of the contractor to correct unacceptable practices called to his attention.
 - 4) Confirming, after completion of the work and based on his observation and test, that he has observed no application procedures in conflict with these specifications.
- B. Any failure by the Architect's or Manufacturer's Representative to detect, pinpoint, or object to any defect or noncompliance of these specifications of work in progress or completed work shall not relieve the contractor, or reduce, or in any way limit, his responsibility of full performance of work required of him under these specifications.
- C. Architect may require tests and inspections as necessary to verify quality of roofing materials and workmanship. Laboratory tests will be performed in accordance with ASTM standard procedures.
1. Owner will select testing laboratory and will pay for Work required by testing laboratory.
 2. Re-tests for work which fail initial tests or inspections shall be paid by contractor.
 3. Non compliance with contractor requirements will result in the Architect/Owner to assign full time quality control and will be subject to reimbursement by the construction manager/contractor.

1.8 QUALITY ASSURANCE

- A. Applicator:
1. Applicator shall have approval by manufacturer of accepted roofing system for application and issuance of specified warranty for a minimum of three (3) years. Proof of license agreement dated at least three years prior to date of bid opening.
 2. Applicator shall be an experienced single firm specializing in the type of roofing and sheet metal work specified, with a minimum of five (5) years of previous successful experience on projects similar in size and scope.
 3. No subcontracting of sheet metal fabrication or installation will be accepted. Contractor must have a sheet metal shop on the company premises.
 4. Applicators shall have a competent Superintendent, who is not actually performing roofing work, on site at all time while work is in progress, with full authority to act on behalf of the Contractor as his agent.
 5. All workmen shall be covered by Workmen's Compensation insurance (verify upon request) and thoroughly experienced in the particular class of work upon which employed. Use of undocumented workers will not be tolerated - No Exceptions.
 6. Contractor shall ensure that base fastener pull out resistance tests on existing decks were performed and approved by Architect and coordinated with Roofing Consultant prior to starting roofing application.
 7. Roofing contractor must have reached the highest level of qualifications from the manufacture they are providing material for (i.e. Master Select contractor).
- B. Regulatory Requirements:
1. Classification by Underwriters' Laboratories, Inc. as a Class A roof covering.
 2. Roofing system shall be installed in accordance with ASCE-7-10 wind uplift requirements for geographical location exposure c, 160 MPH 3-second gust wind speed zone and a safety factor of III.

1. Zone 1 Field -38.7
2. Zone 2 Perimeter -64.9
3. Zone 3 Corner -97.7

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.

C. Laboratory Testing and Samples:

1. Architect may require tests and inspections as necessary to verify quality of roofing materials and workmanship. Laboratory tests will be performed in accordance with ASTM procedures.
2. Owner will select testing laboratory and will pay for Work required by testing laboratory. Contractor shall assume all costs for extraction and patch of all samples.
3. Re-tests for work which fail initial tests or contractor shall pay inspections.
4. Contractor shall correct all deficiencies in accordance with manufacturers recommended procedures at no cost to Owner.

D. Installation:

1. Unless otherwise indicated, the materials to be used in this specification are those specified and denote the type, quality, performance, etc. required. All proposals shall be based upon the use of the specified material.
2. Install materials in accordance with the manufacturer's current published application procedures and the general recommendations of the National Roofing Contractor's Association.
3. It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of it. Any drawings supplied are for reference only.
4. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete, details installed and thoroughly protected and in watertight condition before the close of work for that day.
5. Materials will be securely fastened in place in a watertight, neat and workmanlike manner. All workmen shall be thoroughly experienced in the particular class of work upon which employed. Work shall be performed in accordance with these specifications and shall meet the approval in the field of the Architect.
6. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust, and shall be deposited at an approved disposal site. At completion, all work areas shall be left broom clean and all contractors' equipment and materials removed from the site.

1.9 PERFORMANCE REQUIREMENTS

- A. Fire Resistance: Meet Underwriter's Laboratory Class "A" fire rating.
- B. Contractor shall ensure that base fastener pull out resistance tests on new lightweight insulating concrete fill were performed and approved by Architect and coordinated with Roofing Consultant prior to starting roofing application.
- C. Texas Department of Insurances

1.10 PRE-INSTALLATION CONFERENCE

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

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's original unopened packaging with all tags and labels intact and legible. Carton and can labels shall indicate appropriate warnings, storage conditions, lot numbers, and usage instructions. Handle and store materials and equipment in such a manner as to avoid damage. Coordinate material storage with school Principal.
- B. Manufacturer's packaging and / or roll plastic is not acceptable for exterior storage. Tarpaulin with grommets shall be minimum acceptable for exterior coverings. All materials stored as above shall be minimum of four (4) inches off the substrate, and the tarpaulin tied off with rope.
- C. Products liable to degrade as a result of being frozen shall be maintained above 40 degrees F in heated storage.
- D. Moisture sensitive products shall be maintained in dry storage areas or properly covered. Roofing insulation and felts must always be covered or stored in a dry area when not being used.
- E. The proper storage of materials is the sole responsibility of the contractor. Materials damaged in shipping or storage shall not be used. Wet or damaged roofing materials shall be discarded, removed from job site, and replaced with new materials prior to application.
- F. 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.

1.12 PRECAUTIONS

- A. Some of the indicated materials are extremely flammable and/or toxic. Use precautions indicated on can and carton labels.
- B. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, such as post tension cables, etc.
- C. If torches are used, Contractor shall maintain a three (3) hour fire watch after completion of torching of each day's work. Provide a 20 lb. fire extinguisher near torch at all times. Use a thermal infrared thermometer to monitor all roof areas.
- D. The contractor is to verify the location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. The contractor is to perform all work in such a manner as to avoid contact with the above mentioned items.

1.13 WARRANTY

- A. Roofing Manufacturer: Warrant the roofing and associated Work for 20 years from date of Substantial Completion as follows:
 - 1. The warranty shall be a NDL "No Dollar Limit" / no penal sum type, with total replacement cost.

2. The warranty shall guarantee the entire roof system and associated work against defective materials and workmanship of installation, with NO exclusion for ponding water.
 3. The roof system shall include roof insulation, flashing, metal work, labor, and material shall be guaranteed against failure of workmanship and materials. Repair of the system, including materials and labor, shall be done at no cost to the Owner.
- B. Roofing Contractor: Jointly with any subcontractors employed by him, shall guarantee the work required and performed under this contract will be free from defects in workmanship and materials, and that the building will be and remain waterproof for a five (5) year warranty period, after the Architect accepts the work as substantially complete. The warranty shall be in approved notarized written form, to obligate the Contractor, and subcontractors, to make good the requirements of the warranty. The warranty will be held jointly with the Bonding Company for the first two (2) years and the manufacturer for the remaining three (3) years.
- C. Make arrangements with the materials manufacturer to provide required inspections for issuance of warranty. Final warranty shall be submitted to Owner at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All materials shall be manufactured, specified, or accepted in writing by membrane manufacturer issuing the warranty. Proposed materials shall ensure full system warranty from said manufacturer.
- B. Samples of all materials used on the project, which are not supplied by the membrane manufacturer, shall be submitted to the membrane manufacturer for written approval prior to starting work.
- C. All materials used on the project shall be asbestos free.

2.2 APPROVED PRODUCTS/MANUFACTURERS

- A. Unless noted otherwise, specifications are based on products of named manufacturers but should not preclude the Contractor from using other manufacturers who produce products that meet or exceed the specifications. Manufacturers whose products meet or exceed the specifications, who have manufactured and installed roof materials and systems of the type specified for a minimum of ten (10) years, and who maintains a single source responsibility for the total roofing system, as described herein, may apply for approval as a substitution in accordance with Division 1 requirements regarding substitutions.
 1. All materials shall be manufactured, specified, or accepted in writing by membrane manufacturer issuing the warranty. Proposed materials shall ensure full system warranty from said manufacturer. Installer shall be an applicator licensed by the manufacturer.
 2. Samples of all materials used on the project, which are not supplied by the membrane manufacturer, shall be submitted to the membrane manufacturer for written approval prior to starting work.
 3. All materials used on the project shall be asbestos free.
- B. Approved Manufactures:
 1. Siplast, Inc., Irving, Texas; (972) 869-0070

2. Soprema, Wadsworth, OH; (800) 356-3521
3. Firestone Building Products Company, Carmel, IN; (800) 428-4442
4. Johns Manville, Denver, CO; (800) 654-3103

2.3 ROOFING SYSTEM ASSEMBLY/PRODUCTS

- A. Modified Base Sheet: A fiberglass reinforced, Styrene-Butadiene-Styrene (SBS) modified asphalt coated sheet, having an average weight of 28 pounds per square.
1. Approved Product:
 - a. Siplast Product: Para Base, base sheet
 - b. Soprema Product: Sopra-G, base sheet
 - c. JM Product: Perma Ply 28, base sheet
 - d. Firestone Product: MB Base, base sheet
- B. Dry Sheathing Paper: (For use as a slip sheet) Rosin coated, 5 lbs. per 100 sq. ft.

2.4 ROOF MEMBRANE ASSEMBLY

- A. System Description: A roof membrane assembly consisting of two (2) plies of a prefabricated, reinforced, homogeneous polymer modified asphalt membrane, secured to specified insulation or substrate. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system. Contractor option to install using hot asphalt "mopped", cold adhesive, torched, or any combination – confirm special membrane types with manufacturer. Provide components of the roof membrane assembly meeting the following physical and mechanical requirements.
1. **Hot Asphalt Applied Modified Bitumen Base Ply:** Approximately 90 mil high performance modified bitumen base ply consisting of a lightweight random fibrous glass mat impregnated and coated with high quality modified bitumen and having the following properties:
 - a. Approved Product:
 - 1) Siplast Product: Paradiene 20
 - 2) Soprema Product: Elastophene Sanded 2.2
 - 3) Firestone Product: SBS Base
 - 4) JM Product: DynaBase
 2. **Torch Applied Modified Bitumen Base Ply:** Approximately 120 mil high performance modified bitumen base ply consisting of a lightweight random fibrous glass mat impregnated and coated with high quality modified bitumen and having the following properties:
 - a. :
 - 1) Siplast Product: Paradiene 20 TG
 - 2) Soprema Product: Elastophene Flam
 - 3) Firestone Product: SBS Glass Torch Base
 - 4) JM Product: DynaWeld Base
 3. **Hot Asphalt Applied Modified Bitumen Finish Ply:** Approximately 130 mil or better high performance modified bitumen "cool roof" reflective white finish ply consisting of a lightweight random fibrous glass mat impregnated and coated with high quality Styrene-Butadiene-Styrene (SBS) modified bitumen, and having the following properties:

- a. Approvals: UL Approved, FM Approved (products shall bear seals of approval)
 - b. Surfacing: White synthetic chips
 - c. Solar Reflectance (avg.): greater than 3 year aged .75
 - d. Thermal Emittance (avg.): greater than 3 year aged .75
 - e. Solar Reflectance Index (avg.): greater than 3 year aged 64
 - f. Approved Product:
 - g. 1) Siplast Product: Paradiene 30 FR BW
 - h. 2) Soprema Product: Elastophene LS FR GR SG
 - i. 3) Firestone Product: SBS Glass FR Ultrawhite
 - j. 4) JM Product: DynaGlas FR CR G
4. **Torch Applied Modified Bitumen Finish Ply:** Approximately 140 mil or better high performance modified bitumen “cool roof” reflective white finish ply consisting of a lightweight random fibrous glass mat impregnated and coated with high quality Styrene-Butadiene-Styrene (SBS) modified bitumen, and having the following properties:
- k. Approvals: UL Approved, FM Approved (products shall bear seals of approval)
 - l. Surfacing: White synthetic chips
 - m. Solar Reflectance (avg.): greater than 3 year aged .75
 - n. Thermal Emittance (avg.): greater than 3 year aged .75
 - o. Solar Reflectance Index (avg.): greater than 3 year aged 64
 - p. Approved Product:
 - 1) Siplast Product: Paradiene 30 FR TG BW
 - 2) Soprema Product: Elastophene Flam LS FR GR SG
 - 3) Firestone Product: SBS Glass FR Torch Ultrawhite
 - 4) JM Product: Dynaweld Cap FR CR
5. Stripping Ply: Same as roof system base ply.

2.5 FLASHING MEMBRANE ASSEMBLY

- A. A flashing membrane assembly consisting of two (2) plies of reinforced, polymer modified asphalt membrane (foil face flashing membrane can be used as substitute):
1. Modified Bitumen Flashing Sheet: Same as roof system finish ply.
 2. Modified Bitumen Foil Faced Flashing Sheet (Substitute):
 - a. Siplast Product: “Aluminum” Veral
 - b. Soprema Product: Sopralast 50 TV “Alu”
 - c. Firestone Product: SBS Metal Flash AL
 - d. JM Product: DynaClad AL
 3. Reinforcing Ply: Same as roof system base ply.

2.6 ROUGH CARPENTRY

- A. All nailers, cants and wooden curbs shall be No. 2 or better treated lumber selected to meet design details and field dimensions and requirements of Section 06 10 00, Rough Carpentry. MCQ and MCA only.

2.4 ROOFING SHEET METAL

- A. Refer to Section 07 62 00, Roof Related Sheet Metal.

2.5 ROOF INSULATION

- A. Roofing Insulation:
1. All insulation shall be approved in writing by the membrane manufacturer as to thickness, type, and manufacturer. All insulation must be approved for the specific application with UL and FM Global approval.
 2. Polyisocyanurate Roof Insulation: Shall comply with ASTM C1289 and Federal Specification (FS) HH-I-1972/Gen and HH-I-1972/2, with a 20 psi minimum compressive strength. Insulation shall be surfaced on both sides with a non-asphaltic fiberglass facers. Thickness shall be per drawings. Approved product shall be Enrgy 3 as manufactured by Johns Manville or pre-approved equal.
 3. Recover Board (Unless noted otherwise): Glass-Faced Gypsum Roof Board equal to UL rated Type X "Dens Deck Prime" as produced by Georgia-Pacific. Board sizes shall be 48" x 96" x 1/2" or as indicated on drawings for roof assembly. 1/4" SOPRABOARD is approved substitution with Soprema roofing system. Provide as required by manufacture recommendation primer for Roof System. Approved substitute, SECUROCK by USG.
 4. Tapered ISO. Insulation: Factory cut 48 inches x 48 inches polyisocyanurate board cut to 1/8 or 1/4 inch per foot slope (see drawings); thickness varies; ASTM C1289, UL Class A, Factory Mutual Class 1. Approved product shall be Tapered E'NERG'Y 3 manufactured by Johns Manville or pre-approved equal. Provide 1/2 inch recovery board similar to that specified above over tapered polyisocyanurate board insulation if used.
 5. Tapered Edge Strip: 1-1/2 inches to 0 inches (or as required, field verify), 18 inches x 48 inches, install at all expansion joints, curbs, projections, crickets, saddles and base flashings. Approved material shall be as manufactured by Cant Products or pre-approved equal.

2.6 ROOFING ACCESSORIES

- B. Roofing Adhesives:
1. Mopping Asphalt: Asphalt that has been certified for full compliance with the requirements for Low Fume Type IV asphalt listed in Table I, ASTM D312. Each container or bulk shipping ticket shall indicate the equiviscous temperature EVT, the finished blowing temperature, FBT, and the flash point, FP.
 - a. Approved Product: Trumbull Low Fume asphalt or as required by membrane.
 2. Cold Adhesive (if applicable): An asphalt based adhesive formulated especially for adhering polymer modified asphalt roofing membranes and base plies. Adhere shall be UL & FM listed and approved.
 - a. Soprema Product: FMA
 - b. Siplast Product: PA-311 Adhesive
 - c. Firestone Product: MB Cold Adhesive
 - d. JM Product: MBR Cold Application Adhesive
- C. Bituminous Cutback Materials:
1. Primer: A high flash, quick drying, asphalt solvent blend which meets or exceeds ASTM D41 requirements.
 2. Plastic Cement: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges and conforming to ASTM D4586 Type II requirements.
 3. Flashing Cement: A heavy-bodied all-weather trowel grade mastic, used as a base for laying-up cold process flashing membrane where fast setting adhesives are required.

- D. Sealants: A single component, high performance, elastomeric sealant conforming to ASTM D232 or ASTM C920 requirements. Acceptable types are as follows:
 - 1. Sonolastic NP 1 manufactured by Sonneborn Building Products; Minneapolis, MN (612) 835-3434

- D. Ceramic Granules: No. 11 Grade Specification Ceramic granules of color scheme matching the granule surfacing of the finish ply.

- A. Walkway Pads: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface meeting the following physical and mechanical requirements:
 - 1. Thickness: 0.217 inch
 - 2. Weight: 1.8 lb./ft²
 - 3. Width: 30 inches
 - 4. Approved Product: Paratread Roof Protection Material
 - 5. Walk pads shall have contrasting granule color from surfacing.
 - 6. Provide walk pads shall be installed at point of roof access, at service points of all roof mounted equipment requiring periodic maintenance.
 - 7. Protection pads shall have rounded corners and extend minimum four (4) inches beyond edge of overlying element.
 - 8. Provide new protection pads under all pipe supports, at HVAC and mechanical access points, in front of all roof top doors and openings.

- E. 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 and Insulation (over steel decks): Shall be a minimum #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. Stainless Steel 304 when used with ACQ treated lumber.
 - 4. Nails: Stainless Steel ring shank, size as required to suite application, minimum 11 gauge with 3/8 inch diameter head.
 - 5. Twin Loc Fastener: Pre-assembled corrosion resistant fastener and plate assembly.

2.9 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. Other materials shall be as shown, specified or required and be of the best grade for the proposed use as recommended by the manufacturer.
 - 1. Expansion Joint: As detailed on drawings and outlined in NRCA and SMACNA manuals.
 - 2. Low Level expansion joints, as noted on the drawings, to be fabricated similar to Situra Inc. "Red Line" Low level expansion joint details. Install as per manufactures recommendations.
 - a. Approved Substitute Soprema's "Sopra Joint". Install as per manufactures recommendations.
 - 3. Sealant Backer Rod: Provide compressible rod stack 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.

4. Pipe Hangers and Supports: Provide and install all necessary supports for gas lines, conduit, chilled water lines, duct work, condensate lines, etc. Refer to Section 07 72 00, Roof Accessories.
5. Cant Strips: Shall be wood fiber where used for non-structural purposes. Shall be treated solid wood where used for structural purposes meeting NRCA, Factory Mutual and Underwriters Laboratory guidelines. If solid wood cant is used where insulation exists, cant is to be toe nailed into treated solid wood nailer the same height as insulation.
6. Termination Bar:
 - a. Material: Extruded aluminum bar with lip profile.
 - b. Size: 0.090 inch thick by 3/4 inch wide with 3/16 inch lip width and a 45 degree lip angle, factory punched 1/4 inch x 3/8 inch oval holes spaced six (6) inches on center.
 - c. Approved Product/Manufacturer: "LIPTB 06" manufactured by Olympic Manufacturing Group, Inc., or approved equal.

PART 3 - EXECUTION

3.1 SITE CONDITIONS

- A. Environmental Requirements:
 1. Apply roofing in dry weather.
 2. Do not apply roofing when ambient temperature is below 45 degrees F.
 3. Refer to manufacturers recommendations.

3.2 ROOFING AND FLASHING - GENERAL

- A. Membrane Application: Install roofing in accordance with roofing system manufacturer's current published instructions and the following requirements. Application of roofing membrane components shall immediately follow installation of insulation as a continuous operation.
- B. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this Project. Make necessary preparations, utilize recommended application techniques, apply the specified materials and exercise care in ensuring that the finished application is acceptable to the Owner.
- C. Application of materials shall be in strict accordance with the manufacturer's recommendations except where more stringent requirements are shown or specified. In the instance of a conflict between these specifications and those of the manufacturer, the more stringent specifications shall take precedence.
- D. General Installation:
 1. Protect adjacent areas with tarpaulin or other durable materials.
 2. Contractor shall prevent overspray, and be responsible for parking lot areas and/or adjoining areas not part of this contract.
 3. Contractor shall be responsible for sealing, as required, all openings that may allow bitumen migration or drippage, i.e. pitch dams, envelopes, and filler strips.
 4. Prepare surfaces according to manufacturer's or applicator's published instructions. All metal that is to receive bitumen, or come in contact with bitumen or adhesive, shall be first primed with appropriate primer. All Kynar 500 or Hylar 5000 finished

- metal shall be buff sanded on the surface which is to be primed prior to the application.
5. Use cleaning materials or primers necessary to render an acceptable surface/substrate.
 6. All surfaces/substrates shall be clean and dry prior to application of materials. Roof deck substrates shall be inspected for moisture in accordance with the manufacturer's recommendations. Architect's representative shall witness inspection. Roofing installed before inspection by Architect's representative shall be removed to allow inspection.
 7. Prior to application of felts and membrane, all foreign matter, gravel, etc., shall be removed from the substrate. Gravel or debris between the substrate and plies is not acceptable.
 8. Ambient temperature shall be 45 degrees F and rising.
 9. Bitumen kettles or tankers shall have a visible thermometer and thermostatic control to provide positive monitoring of the bitumen temperature when it is heated in accordance with manufacturer's instructions. Kettle shall be kept a minimum of 20 feet away from building, placed so that fumes, odors, and smoke, do not enter building through windows, doors, fresh air vents or similar entrances; are not directed towards freshly painted or anodized surfaces, glass or other glazing materials. Do not place kettle under trees or near vegetation. The assigned kettle man shall remain in close attendance, within 25 feet of ground level, while burners are lit. Kettle lids are to remain closed except for loading. Level of bitumen shall be kept within eight (8) inches from top of kettle. All kettles are to have afterburners installed to reduce fume emissions.
 10. Asphalt Bitumen Heating: Heat and apply bitumen in accordance with equiviscous temperature method ("EVT Method") as recommended by the manufacturer. Discard bitumen that has been held at temperature, exceeding finished blowing temperature (FBT) for a period exceeding three hours. Do NOT heat bitumen to a temperature higher than 25 degrees F (14 degrees C) below flash point.
 11. Asphalt Temperatures: If the EVT information is not provided, the following asphalt temperature shall be observed. Maximum heating temperature shall be 525 degrees F. Minimum application temperature shall be 400 degrees F.
 12. Asphalt Moppings: Ensure that all moppings do not exceed a maximum of 25 pounds per square. Mopping shall be total in coverage, leaving no breaks or voids.
 13. Membrane Adhesive Application: Apply cold adhesive in a smooth, even, continuous layer without breaks or voids at the rate of 1-1/2 gallons per square per ply. (The porosity of some substrates may require a heavier application to ensure full adhesion.)
 14. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.
 15. Circulate bituminous materials, do not allow bituminous materials to stand in luggers for long periods. Use insulated hot transport lines and luggers.
 16. Keep kettle lid closed except when adding bitumen.
 17. Wrinkles, buckles, kinks, and fishmouths are not acceptable when laying felt and membrane.
 18. Dry voids of felt on felt are not acceptable.
 19. Primed cant strips shall be installed at the intersection of the deck and the vertical surfaces.
 20. All flashings shall be mechanically top-fastened with a termination bar a minimum of six (6) inches on center at the top leading edge, and be a minimum of eight (8) inches in height above the finished membrane height.
 21. On slopes greater than one (1) inch in 12 inches, refer to NRCA and/or manufacturer's guidelines for backnailing procedures and follow the more stringent guidelines for all specified materials.

22. Correct all errors in application the same work day they occur, including voids, fishmouths, dry laps or spots, wrinkles, ridges, blisters, bare spots, improper application, physical damage and all work not meeting specifications.
23. Follow manufacturer's recommendation for application of cold adhesive due to slope requirements.

3.3 NAILERS

- A. Wooden nailers shall be installed at perimeter edges or drip edges on outside perimeter of building in accordance with FM Global 1-49 securement requirements. All deck penetrations (soil stacks, mechanical curbs, etc.) shall receive wooden nailers stacked minimum 3/4 inch above designed deck thickness. MCA and MCQ only.
- B. All Construction: Nailers shall be the same height as the finished height of the insulation layer. Nailers shall be anchored to resist a pull-out force of 175 pounds per foot. Fasteners shall be no less than two (2) per nailer, and be spaced at three (3) feet on center maximum or as required by FM Global 1-49 requirements. Provide nailers at all penetrations. Install/Raise all curbs, etc, a minimum of ten (10) inches above roof deck.

3.4 SUBSTRATE PREPARATION

- A. Ensure decking to receive insulation is clean (including flutes), dry, even and properly secured.
- B. Structural concrete decks shall have existing fully adhered roof membrane removed to the greatest extent possible and without exception all loose, poorly bonded roofing plies, dirt, dust and debris shall be removed completely.

3.5 APPLICATION OF BASE SHEET

- A. Decks shall be covered with a base sheet, mechanically fastened as follows:
 1. Install in accordance with manufacturer's current published application instructions and to meet ASCE-7 wind uplift requirements. Fasteners and fastening patterns shall be determined by building height, pull out values from lightweight insulating concrete decks (more stringent applies), location and geographical area of the United States. It is the contractor's responsibility to consult current ASCE-7 publications, literature, and bulletins that are in effect at the time of this project. Submit perimeter, field and corner fastening patterns and cite all ASCE-7 data pertaining to the fastening pattern to the Architect for review.

3.6 APPLICATION OF INSULATION

- A. General:
 1. Manufacturer's Instructions: In regard to attachment, the manufacturer's instructions or specifications shall determine the suitability for an application.
 2. Precautions: The surface of the insulation must not be ruptured or damaged prior to installation of the roof membrane. Replace damaged boards.
 3. Thermal insulation boards shall be laid on the substrate in parallel rows with end joints staggered and butted as close as possible. All joints shall be tight and at the roof perimeter and roof penetrations, insulation shall be cut neatly and fitted to reduce openings to a minimum. All openings 1/4 inch or larger shall be filled with insulation.
 4. Insulation shall be tapered or feathered at drains and scuppers to provide proper drainage (if applicable).

5. No more insulation shall be installed than can be covered by the completed roof system by the end of the day or the onset of inclement weather.
 6. Tapered insulation and crickets, when specified, shall be placed in accordance with the drawings and/or as required NRCA standards.
- B. For subsequent layer or layers of insulation or specified recovery board, the top surface of the underlying layer of insulation shall be coated with hot asphalt using a minimum of twenty-five pounds (25#) per one hundred (100) square feet of surface, and subsequent layers of insulation shall be applied using offset joints, so that all individual insulation layers joints are offset a minimum of six inches (6") both ways with the preceding layer, and immediately walked in place.

3.7 ROOF MEMBRANE INSTALLATION

- A. Membrane Application: Install roofing in accordance with roofing system manufacturer's current published instructions and the following requirements. Application of roofing membrane components shall immediately follow application of insulation as a continuous operation.
- B. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this Project. Make necessary preparations, utilize recommended application techniques, apply the specified materials (i.e. granules, metallic powder, etc.) and exercise care in ensuring that the finished application is acceptable to the Owner.
- C. Adhesive Application: Apply cold adhesive with a spray equipment or squeegee in a smooth even, continuous layer without breaks or voids at the rate of 1 ½ to 2 gallons per square per ply. (The porosity of some substrates may require a heavier application to ensure full adhesion. Refer to manufacturer's requirements.)
- D. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.
- E. Roofing Application: Apply all layers of roofing free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets. Lap seams between the base ply layer and the finish ply layer shall not coincide. Stagger the courses to ensure this.
1. Apply all layers of roofing so that water flows over or along lap seams, but never against laps.
 2. Mechanically attached and heat weld the seams or fully bond the base ply to the recover board with cold adhesive, torch, hot asphalt. Each sheet shall have minimum three (3) inch side laps and six (6) inch end laps. Each sheet shall be applied directly behind the adhesive applicator. Stagger end laps a minimum of three (3) feet.
 3. Fully bond the finish ply to the base ply with cold adhesive, torch, or hot asphalt. Each sheet shall have a minimum of three (3) inch side and six (6) end laps. Each sheet shall be applied directly behind the adhesive applicator. Stagger end laps of the finish ply a minimum of three (3) feet. Stagger side laps of the finish ply a minimum of 12 inches from side laps in the underlying base ply. Stagger end laps of the finish ply a minimum of three (3) feet from end laps in the underlying base ply.
 4. Maximum sheet lengths and special fastening of the specified roof membrane system may be required at various slope increments where the roof deck slope exceeds 1/2 inch per foot. The manufacturer shall provide acceptable sheet lengths and the required fastening schedule for all roofing sheet applications to applicable roof slopes.

5. Lap Treatment: A 20-pound roller shall be used on all side and end laps, following immediately behind application, apply uniform pressure across lap area to achieve a continuous visible bleed out.
- F. Granule Embedment: Broadcast mineral granules over all bitumen overruns on the finish ply surface, while the bitumen is still hot, to ensure a monolithic color and adhesion.

3.8 ROOF FLASHING MEMBRANE INSTALLATION

- A. Flashing - General:
 1. Flashings shall be installed using the manufacturer's flashing membrane, with length of run not to exceed manufacturer's recommendations.
 2. Wooden nailers or curbs shall be installed at all edges and openings in the roof, mechanically fastened to the deck. The nailers should be of exterior grade wolmanized timber, and of the same thickness as any insulation to be used on the roof.
 3. Cant strips shall be installed at the intersection of the deck and/or all vertical surfaces. Prime all cants.
 4. The roofing field membrane shall extend up over and to the top of cant strips at all vertical intersections or out to the roof's edge.
 5. All substrates receiving flashing membrane shall be clean and primed with asphalt primer, prior to application.
 6. All flashings shall be mechanically fastened with a termination bar a maximum of six (6) inches on center, be a minimum of eight (8) inches above finished roof height (seal top with three (3) coursing), extend a minimum of nine (9) inches onto the field of horizontal roof membrane, and not exceed ten (10) linear feet of run in length.
 7. Install flashing membrane in accordance with drawings and/or material manufacturer's guarantee requirements, whichever is the most stringent.
 8. Exert sufficient pressure on the flashing membrane to ensure the prevention of air pockets. This can be accomplished by using a damp, kitchen type sponge mop or a damp, heavy duty cotton nap paint roller.
 9. Prime all end laps of the flashing membrane with a uniform coating of the specified asphalt primer and allow to thoroughly dry prior to overlapping of adjoining sheets.
 10. Probe laps using a clean, heated roofing trowel and heat fuse dry laps of the flashing membrane to ensure a complete seal.
- B. Flashing Application - Masonry Surfaces: Flash masonry parapet walls and curbs using the reinforcing sheet and the metal foil flashing membrane. After the base ply has been applied to the top of the cant, fully adhere the reinforcing sheet, utilizing minimum three (3) inch side laps and extend a minimum of three (3) inches onto the base ply surface and three (3) inches up the parapet wall above the cant. After the final roofing ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or by application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using three (3) foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the metal foil flashing layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of four (4) inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the wall/roof surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on nine (9) inch centers. (See manufacturer's schematic for visual interpretation.)

- C. Flashing Application - Wood Surfaces: Flash wood or plywood parapet walls and curbs using the reinforcing sheet and metal foil flashing membrane. The reinforcing sheet shall have minimum three (3) inch side laps and extend a minimum of three (3) inches onto the base ply surface and to the top of the parapet wall, curb, etc. Nail the reinforcing sheet through the field of the sheet to the vertical wood surface on 12 inch centers from the top of the cant to top of wall curb, etc. Fully adhere the remainder of flashing reinforcing sheet that extends over the cant and roof level. After the finish ply has been applied to the top of the cant, prepare the surface area that is to receive flashing coverage by torch heating granular surfaces or application of asphalt primer; allowing primer to dry thoroughly. Torch apply the metal foil-faced flashing into place using three (3) foot widths (cut off the end of roll) always lapping the factory selvage edge. Extend the flashing sheet a minimum of four (4) inches beyond the toe of the cant onto the prepared surface of the finished roof and up the wall to the desired flashing height. Exert pressure on the flashing sheet during application to ensure complete contact with the wall/roof surfaces, preventing air pockets; this can be accomplished by using a damp sponge or shop rag. Check and seal all loose laps and edges. Nail the top edge of the flashing on nine (9) inch centers. (See manufacturer's schematic for visual interpretation.)
- D. Projection Flashings:
1. Plumbing Vents: Soil vent stack pipes shall receive lead flashings installed in accordance with practices set forth in the NRCA Roofing Manual. The lead shall be carried up and over the top of the stack, and crimped down into the pipe to form a watertight seal. Projections shall be flashed as recommended by the roof membrane manufacturer. Strip-in flange with specified stripping ply and cap with finish ply. Provide flashing membrane target.
 2. Square Projections: Strip in all flanges on square projections with specified stripping ply and cap with finish ply. Provide flashing membrane target. Provide tapered edge strips around base. Cricket up-side slope.
 3. Prime all flanges prior to setting in a bed of mastic. Install to manufacturer's specifications. Provide tapered edge strips around base as required. Cricket up-side slope.
 4. Round Projections: Strip in all flanges on round projections with specified stripping ply and cap with finish ply. Provide flashing membrane target.
 5. Prime all metal prior to setting in mastic. Install to manufacturer's specifications.
- E. Wall and Curb Flashings:
1. The flashing substrate shall be free of all dirt and loose material.
 2. $\frac{3}{4}$ " plywood is to be used at all parapets that receive wall flashings.
 3. The underlayment ply or plies shall be brought to the top of the cant strip and adhered.
 4. Starting on the roof at least six (6) inches from the roofside edge of the cant strip, adhere two (2) plies of flashing extending over the cant and up the vertical a minimum of eight (8) inches. Each lap of the ply sheet shall be a minimum of three (3) inches.
 5. Starting two (2) inches past the flashing plies, install one (1) ply of SBS flashing membrane in hot asphalt. Laps shall not coincide with previously installed plies. The top of the SBS flashing shall be one (1) inch past the previously installed plies above the cant strip.
 6. Fasten the top edge of the flashings on six (6) inch centers using approved termination bar and fasteners.
 7. An NRCA-approved metal counterflashing shall extend down over the flashing a minimum of four (4) inches.
 8. Cricket the up-side slope at all curb projections.

- F. Perimeter Edge Flashing: Refer to Section 07 62 00.
- G. Bleed out of flashing membrane: Broadcast bulk aluminum powder over all bitumen overruns on the flashing membrane surface while the bitumen is still hot to ensure a monolithic surface color. With approval of manufacturer, a premium glossy aluminum paint may be used.

3.9 OVERNIGHT SEAL / WATER CUT-OFF

- A. Over Night Seal: Shall be performed according to accepted roofing practice as outlined in the NRCA Roofing Manual.
- B. Water Cut-Off: At the end of day's work or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to resumption of roofing.

3.10 ROOF SYSTEM INTERFACE WITH RELATED COMPONENTS

- A. The following is a list of descriptions for correct installation of components integrated into the roof membrane assembly. In all cases, unless otherwise approved, incorporate flanged components into the system between the application of the base ply and finish ply. The flange must be primed with a uniform coating of approved ASTM D41 asphalt primer and allowed to dry thoroughly; all flanges must be set in approved mastic.
- B. Sealant: Caulk all exposed finish ply edges at gravel stops, waste stacks, pitch pans, vent stacks, etc., with a smooth continuous bead of approved sealant.
- C. Sheet Metal: Refer to Section 07 62 00, ROOF RELATED SHEET METAL.

3.11 FIELD QUALITY CONTROL AND INSPECTIONS

- A. Roof cuts shall be performed and repaired at contractor's expense. Cuts shall be made in the areas as indicated by the Architect's representative. Send required roof cuts to roof membrane manufacturer for laboratory examination. Roof cuts required by the Architect's representative shall be furnished to the Architect's representative for testing.
- B. Remove not more than one (1) 12 inch x 12 inch cut per 5,000 square feet of roof area or fraction thereof.
- C. Field audit will follow criteria outlined in current roof membrane manufacturer's Reference Manual.
- D. Repair sampled areas with "feathered in" patch consisting of same number of plies as in the roof specification.
- E. Correct deficiencies in roof as prescribed in current roof membrane manufacturer's Reference Manual and as approved by Architect's Representative.

3.12 CLEANING AND PROTECTION

- A. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.

- B. Leave all areas around job site free of trash, debris, roofing materials, equipment, and related items after completion of job.
- C. All bituminous or roofing related materials shall be removed from ladders, stairs, railings, and similar parts of the building.
- D. Remove bitumen stains from walls, walkways, and driveways.

END OF SECTION

SECTION 07 62 00 - ROOF RELATED SHEET METAL

PART I – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 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 52 19, Modified Bitumen Membrane Roofing System; and
 - 4. be performed by a single source contractor.

1.3 RELATED WORK

- A. Section 07 52 19 - Modified Bitumen Membrane Roofing System
- B. Section 07 72 00 - Roof Accessories
- C. All Sections of Work relating to or affecting the roofing system, including mechanical, plumbing and electrical items.

1.4 REFERENCES

- A. ASTM International (ASTM)
 - 1. A525, Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
 - 2. A526, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality
 - 3. A527, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality
 - 4. A167, Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
 - 5. B32, Standard Specification for Solder Metal

6. C1107, Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
- B. Federal Specifications (FS)
 1. QQ-L-201
- C. National Association of Architectural Metal Manufacturers (NAAMM)
- D. National Roofing Contractors Association (NRCA)
 1. Roofing and Waterproofing Manual
- E. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)
 1. Architectural Sheet Metal Manual
- F. ANSI / SPRI ES-1: Fabricate and install sheet metal edge flashings and copings to comply with requirements of ANSI / SPRI ES-1 for 160 MPH wind speed zone and wind resistance loads.

1.5 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.

1.6 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.

1.7 INSTALLATION CONFERENCE

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

1.8 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.

1.9 WARRANTIES

- A. Manufacturer's Product Warranty:
 - 1. Manufacturer's standard 20 year Kynar 500 or Hylar 5000 Finish warranty signed by the manufacturer, with guarantee covering any failure of the fluoropolymer finish during the warranty period.
 - 2. Failure is defined to include, but not be limited to:
 - a. Deterioration of finish, such as fading, discoloring, peeling, cracking, corroding, etc.
 - 3. 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

2.1 APPROVED MANUFACTURERS

- A. Manufacturers named within specification are approved for use on the Project providing:
 - 1. their products meet or exceed the specifications;
 - 2. company has a minimum of five (5) years experience manufacturing products of the type specified;
 - 3. products have been tested in conjunction with roofing membrane system as an assembly and as such has obtained the same approval and rating as the roofing membrane system; and
 - 4. products are approved for use by the roofing membrane manufacturer.
- B. Substitutions shall be in accordance with Division 1 requirements regarding substitutions.

2.2 SHEET METAL MATERIALS

- A. General Requirements: Roofing sheet metal system shall have been tested in conjunction with roofing membrane system as an assembly and have the same approval and rating as the roofing membrane system.
- B. Prefinished Aluminum Sheet:
 - 1. Precoated type, aluminum conforming to Fed. Spec. QQ-A-250, ASTM B209.
 - 2. Finish: Kynar 500, color as selected by Architect from manufacturer's full range of colors.
 - 3. Thickness: Minimum 0.040 inch, except as otherwise indicated.
- C. Sheet Lead:
 - 1. Comply with FS QQ-L-201, Grade B
 - a. Four (4) pound minimum for use at roof drains and soil stacks.
- D. Stainless Steel: ASTM A167, Type 302/304 Soft Temper, No. 2D finish. Minimum thickness 24 gauge, except as otherwise noted.

2.3 FASTENERS

- A. Same metal as flashing/sheet metal or other non-corrosive metal or as noted below.
- B. Exposed fasteners shall be self-sealing and gasketed for weathertight installation. (ZAC type)
- C. Match finish of exposed heads with material being fastened.
- D. Mechanical Fasteners:
 - 1. Nails: Stainless Steel Ring shank, minimum 1-1/2 inches in length with 1/2 inch diameter head.
 - 2. Washers: Steel washers with bonded rubber sealing gasket.
 - 3. Screws: Self-tapping sheet metal type of stainless steel or compatible with material being fastened, with hooded integral EPDM washers (ZAC type).
 - 4. Rivets: Stainless steel and cadmium plated material, closed end type of sizes recommended by sheet metal manufacturer to suit application.
- E. Clips:
 - 1. Continuous Cleat (coping/fascia): Minimum 20 gauge, G-90 galvanized, stainless steel, or aluminum. Match material of coping/fascia and provide one (1) gauge heavier.

2.4 RELATED MATERIALS

- A. Solder: ASTM B32, alloy grade 58, 50 percent tin, 50 percent lead.
- B. Flux:
 - 1. Phosphoric acid type, manufacturer's standard.
 - a. For Use with Steel or Copper: Rosin flux
 - b. For Use with Stainless Steel: Acid-chloride type flux, except use rosin flux over tinned surfaces.
- C. Underlayment:
 - 1. 48 mil minimum, non-reinforced, homogeneous, waterproof, impermeable elastomeric sheeting manufactured by Nervastral, Inc. or Lexsuco.
- D. Adhesives: Type recommended by flashing sheet manufacturer seaming and adhesive application of flashing sheet to ensure adhesion and watertightness.
- E. Metal Accessories: Sheet metal clips, straps, anchoring devices, clamps and similar accessories required for the complete installation of work, matching or compatible with material being installed, non-corrosive, size and gauge recommended by installer to suit application and performance.
- F. Sealant:
 - 1. Type A:
 - a. Type: One-part, non-sag, moisture-curing polyurethane sealant.
 - b. Approved Products/Manufacturers: "Chem-Calk 900" manufactured by Bostik Construction Products Division, "Vulkem 921" manufactured by Mameco International, Inc., "Dynatrol I" manufactured by Pecora Corporation, "NP 1" manufactured by Sonneborn Building Products, or approved equal.
 - 2. Type B:
 - a. Type: One-part, neutral-curing, medium-modulus silicone sealant for sealing metal to metal surfaces, i.e. metal edge, cover plates, etc.
 - b. Approved Products/Manufacturers: "Chem-Calk 1200" manufactured by Bostik Construction Products Division, "795 Silicone Building Sealant" manufactured by Dow Corning Corporation, "895 Silicone" manufactured

by Pecora Corporation, "Omniseal" manufactured by Sonneborn Building Products, "Spectrem 2" manufactured by Tremco Incorporated, or approved equal.

- G. Grout - Pitch Pans:
 - 1. Type: Quick-setting, non-shrink, non-metallic, high strength formula complying with ASTM C1107.
 - 2. Approved Products/Manufacturers: "Sure Grip High Performance Grout" manufactured by Dayton Superior Corporation, "Premier Quick-Trim" manufactured by L & M Construction Chemicals, Inc., "Masterflow" manufactured by Master Builders, Inc., "SonnogROUT 10K" manufactured by Sonneborn Building Products, or approved equal.

- H. Pitch Pan Filler:
 - 1. Type: Pourable polyurethane sealer, approved by roofing system manufacturer.
 - 2. Approved Products/Manufacturers: "Quick Pitch Sealer" manufactured by U.S. Intec, "SPM Pourable Sealer" manufactured by Johns Manville, or approved equal.

- I. Termination Bar:
 - 1. Material: Extruded aluminum bar with flat profile.
 - 2. Size: 1/8 inch thick by one (1) inch wide with factory punched 1/4 inch x 3/8 inch oval holes spaced six (6) inches on center.
 - 3. Approved Product/Manufacturer: "TB 125" manufactured by TruFast Corp., or approved equal.

- J. Pipe Hangers and Supports: Refer to Section 07 72 00, Roof Accessories.

- K. Splash Blocks: Concrete type, of size and profiles indicated; minimum 3,000 psi compressive strength at 28 days, with minimum five (5) percent air entrainment. Use at locations where roof drainage dumps on ground.

- L. Splash Pans: 22 gauge stainless steel, of size and profiles indicated. Use at locations where roof drainage discharges over adjoining, lower roof level(s).

- M. One-Way Moisture Relief Vents: Shall be fabricated from spun aluminum as recommended by Roofing Manufacturer.

2.5 FABRICATION

- A. Except as otherwise indicated, fabricate work in accordance with SMACNA Architectural Sheet Metal Manual and other recognized industry practices and reviewed shop drawings. Form all flashings, receivers and counterflashings in accordance with standards set forth in the NRCA roofing manual and SMACNA.

- B. Comply with manufacturer's installation instructions and recommendations.

- C. Unless noted otherwise, fabricate perimeter edge/fascia, scuppers, gutters, downspouts, copings, counterflashings, wind clips, and trim from pre-finished aluminum sheet steel.

- D. Shop fabricate work to greatest extent possible. Fabricate inside and outside corners for metal edges, counterflashing, and coping caps of equal length – minimum 2 foot lengths.

- E. Fabricate items to size and dimensions as indicated on the drawings. Limit single-piece lengths to ten (10) feet.

- F. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work sufficient to permanently prevent leakage, damage or deterioration of the work.
- G. Integrate flashing in a manner consistent with detailing. Form work to fit substrates.
- H. Make angle bends and folds for interlocking metal with full regard for expansion and contraction to avoid buckling or fullness in metal after installation.
- I. Fabricate items with straight lines, sharp angles, smooth curves, and true levels. Avoid tool marks, buckling, and oil canning.
- J. Fold back edges on concealed side of exposed edge to form hem.
- K. Unless noted otherwise, lap joints minimum one (1) inch. Rivet and solder joints on parts that are to be permanently and rigidly assembled.
- L. Seams:
 - 1. Wherever possible, fabricate non-moving seams in sheet metal with flat-lock seams and end joints.
 - 2. Pre-finished Galvanized Steel: Seal pre-finished metal seams with rivets and silicone sealant.
 - 3. Metal Other than Aluminum: Tin edges to be seamed, form seams, and solder.
- M. On Kynar 500 or Hylar 5000 pre-finished metal, surface sand metal flanges prior to applying any primers. Prime all metal in contact with bituminous material.
- N. Backpaint all concealed metal surfaces with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals.
- O. Expansion Provisions: Where lapped or bayonet type expansion provisions in work cannot be used or would not be sufficiently waterproof or weatherproof, form expansion joints of intermeshing hooked flanges, not less than one (1) inch deep filled with mastic sealant concealed within joints.

2.6 FABRICATED ITEMS

- A. Metal Flashings: (Minimum ten (10') foot lengths)
 - 1. Through wall Receiver Tray: Minimum 24 gauge stainless steel, through wall receivers shall not extend past the face of the exterior veneer more than $\frac{3}{4}$ ".
 - 2. Counterflashing: Minimum 24 gauge stainless steel
- B. Wind Clips: Minimum 24 gauge stainless steel (or match material of counterflashing), one (1) inch wide by length to engage counterflashing a minimum of 1/2 inch.
- C. Roof Penetrations:
 - 1. Umbrella Counterflashing: Two-piece construction of minimum 24 gauge stainless steel, fabricated in accordance with drawings or project requirements.
 - 2. Pitch Pans:
 - a. 24 gauge stainless steel.
 - b. Fabricate to provide installed minimum clear inside perimeter dimension of two (2) inches on each side of penetrating element.
 - c. Fabricate pans to at least six (6) inches above the finished roof membrane and with 1/4 inch hem at top edge and with four (4) inch flanges. Round all corners of flange.

- d. Fabricate metal bonnets for all pans, NO EXCEPTIONS. Fabricate bonnets with metal compatible with metal to which bonnet is to be attached. On beams and other steel, weld in place bonnets fabricated from 1/4 inch steel plate. Draw band bonnets fabricated from 22 gauge stainless steel may be used on circular projections.

- D. Metal Edge:
 - 1. Minimum 0.040 inch thick pre-finished aluminum formed in maximum ten (10) foot lengths, with six (6) inch wide cover plates of same profile, four (4) inch flange, maximum seven (7) inch fascia, 3/4 inch gravel stop.
 - 2. Provide expansion slip joints at maximum 20 feet on center.
 - 3. Shop fabricate all interior and exterior corners. Fabricate exterior corners with 18 inch minimum to four (4) foot maximum legs. Lap, rivet, and seal prior to delivery to jobsite.
 - 4. Fabricate to sizes and dimensions as indicated on drawings with a minimum one (1) inch coverage past top of wall. Refer to SMACNA Fig. 2-5A.
 - 5. Provide mock-up for Architect's approval prior to fabrication.

- E. Continuous Cleats: Continuous strips, same material and profile, minimum one gauge heavier of item which cleats attach.

- F. Vent Hoods, Sleeves, Penetration Flashings, and Accessories: Minimum 24 gauge stainless steel, or as shown or directed otherwise.

- G. Angle Termination Bar: Aluminum pressure bar 1/8 inch x one (1) inch.

- H. Vent Pipe Flashing: Four (4) pound lead. Provide proper size to fold down inside of pipe a minimum of one (1) inch.

- I. Roof Drain Flashing: Four (4) pound lead, minimum 30 inches by 30 inches.

- J. Coping:
 - 1. Minimum 0.040 inch thick pre-finished aluminum, with six (6) inch wide cover plates of same profile.
 - 2. Fabricate as outlined in SMACNA; Refer to Figure 3-4 A.
 - 3. Provide tapered substrate to slope to one (1) side, and cover with waterproof membrane.
 - 4. Install with continuous cleat one (1) side and fasten other side.

- K. Gutters / Downspouts / Collector Heads:
 - 1. Gutters and Downspouts: Minimum 0.040 inch thick pre-finished aluminum formed in maximum ten (10) foot lengths, with six (6) inch wide cover plates. Minimum five (5) inch by six (6) inch box gutter (verify size meets rainfall data per SMACNA).
 - 2. Gutter / Downspout Straps: Minimum 0.040 inch thick pre-finished (match color) aluminum. Hem both sides.
 - 3. Gutter Supports: Minimum 0.040 inch thick pre-finished (match color) aluminum hemmed around 1/8 inch galvanized bent steel bracket.
 - 4. Gutter Screen: Stainless steel 1/4 inch diamond wire screen enclosed in a pre-finished frame.
 - 5. Collector Heads: Minimum 0.040 inch thick pre-finished (match color) aluminum. As outlined in SMACNA; Refer to Figure 1-25F and Figure 1-28 with alternate Section A-A.

- L. Pipe Box Cover: 24 gauge stainless steel.

- M. Heat Exhaust Curbs and Hoods: 22 gauge stainless steel.

- N. Expansion Joint Cover: Minimum 24 gauge stainless steel (Provide pre-finished metal at perimeter edge end termination.)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify substrates are smooth and clean to extent required to perform sheet metal work.
- B. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set in place.
- C. Verify that reglets, nailers, cants, and blocking to receive sheet metal are in place and free of concrete and soil.
- D. Do not start work until conditions are satisfactory.

3.2 PREPARATION

- A. Field measure site conditions prior to fabrication work.
- B. Install starter and edge strips and cleats before starting installation.

3.3 INSTALLATION

- A. Install sheet metal with lines, arises, and angles sharp and true, and plane surfaces free from objectionable wave, warp, or buckle. Exposed edges of sheet metal shall be folded back to form 1/4 inch hem on concealed side from view. Finished work shall be free from water retention and leakage under all weather conditions. Pre-fabricated corners or transitions are required at changes in direction, elevation, or plane and at intersections. Locate field joints not less than 12 inches, nor more than three (3) feet from actual corner. Laps shall be one (1) inch, riveted and soldered at following locations:
 - 1. Pre-fabricated corners;
 - 2. transitions;
 - 3. changes in direction, elevation, and plane; and
 - 4. at intersections.
- B. Anchor units of work securely in place to prevent damage or distortion from wind or buckling. Provide for thermal expansion of metal units; conceal fasteners wherever possible; and set units true to line and level as indicated. Install work with laps, joints, and seams which are permanently watertight and weatherproof.
- C. Install fabricated sheet metal items in accordance with manufacturer's installation instructions and recommendations and with SMACNA Architectural Sheet Metal Manual.
- D. Separations: Provide for separation of metal from dissimilar metal or corrosive substrates by coating concealed surfaces with zinc chromate, bituminous coating, or other permanent separation at locations of contact as recommended by manufacturer or fabricator. Do not use materials which are incompatible with roofing system.
- E. Continuous Cleat: At exposed edges of perimeter edge, fascias, cap flashings, and where required, attach continuous cleat at six (6) inches on center with appropriate fasteners.
- F. Gravel Guard / Fascia:

1. Install with expansion joints 10 feet o.c., 1/2 inch expansion leeway, with cover plate.
 2. Set in asphalt mastic and fasten into nailer at 3 inches o.c. staggered.
 3. Buff sand Kynar surface of flange and prime.
 4. Strip in flange with specified stripping plies set in hot bitumen extending 3 inches from outer edge of flange to at least 3 inches inward towards gravel stop. Provide finish stripping ply of modified bitumen base ply in hot bitumen extending 6 inches from the outer edge of the flange and butt base of gravel stop.
- G. Counterflashing:
1. Do not use surface mount counterflashing except as noted in drawings.
 2. Set in through wall with receiver and spring lock counterflashing, as detailed in drawings and to NRCA roofing manual, SMACNA standards.
 3. Coordinate installation of through-wall flashing with the masonry contractor.
 4. Seal through-wall in conjunction with masonry wall waterproofing.
 5. Install wind clips 30 inches o.c. at all counterflashing over five (5) feet in length.
- H. Pitch Pans, Metal Flanges:
1. Apply mastic under pitch pan or metal flashing flange at least 1/2 pound per linear foot.
 2. Prime all metal flanges with asphalt primer prior to flashing installation.
 3. Clean all projections enclosed in pitch pans in any manner suitable and coated with a rust inhibitive coating as approved by the Architect. Coating shall be allowed to dry prior to pitch pan fill.
 4. Fill base of pitch pans with grout or cementitious binder and allow to cure.
 5. Top Finish Fill: Self-leveling, one-part urethane; at least two (2) inches to top of pitch pan sides.
 6. Strip in pitch pan flanges with two strips of specified stripping plies set in hot bitumen extending three (3) inches from the outer edge of the flange to at least three (3) inches inward toward base of pitch pan. Provide finish stripping ply of SBS modified bitumen membrane in hot bitumen extending six (6) inches from the outer edge of the flange and butt to base of pitch pan.
- I. Sanitary Vent Stacks:
1. Prime top and bottom flanges of lead flashing sleeve. Set flange in uniform troweling of plastic roof cement. Prime top side of flange to receive strip-in membrane.
 2. Fold lead sleeve down inside of pipe a minimum of one (1) inch. Apply a continuous bead of sealant on inside of pipe prior to folding lead sleeve.
- J. Roof Drains:
1. After membrane installation, prime bottom of lead flashing sheet and set in uniform bed of plastic roof cement at specified locations.
 2. Extend lead flashing into drain bowl or pipe a minimum of two (2) inches and over top of piping/bowl connection, if possible. Apply a continuous bead of specified Type A sealant, at intersection of pipe and drain bowl.
 3. If drain bowl and pipe connection is contaminated with bituminous material, strip-in area with three (3) coursing of plastic roof cement and fabric.
 4. Prime top of lead flashing sheet to receive strip-in membrane.
- K. Gutters / Downspouts:
1. Install gutters as detailed.
 2. Install downspouts plumb and level, attached to columns or wall with straps located at top and bottom of downspout and maximum ten (10) feet on center.
 3. Install splash pad or block under discharge port of downspouts. Install splash pan over a protection (walkway) pad for downspouts located at roof level.

4. End Caps, Downspout Outlets, Gutter and Downspout Straps, Support Brackets and joint fasteners to be manufactured to suit profile and dimension of gutter and downspout.
 5. Install all anchoring devices as outlined in SMACNA.
 6. Expansion Joints: Lap or Butt type per SMACNA, locate every 50 linear feet.
- L. Expansion Joint:
1. Construct wood curbs as shown on drawings and as outlined in the NRCA and SMACNA Manuals.
 2. Install underlayment, form envelope, and secure underlayment to curb. Fill envelope with compressible insulation.
 3. Securely fasten expansion joint cover to curb with grommetted fasteners spaced six (6) inches on center.
 4. Taper expansion joint down at the metal edge.
- M. Coping:
1. Install wood nailers as shown on drawings.
 2. Install metal cleats with appropriate fasteners spaced six (6) inches on center.
 3. Install underlayment over the wood substrate. Lap ends minimum of six (6) inches and secure membrane in place. Seal laps with appropriate adhesive.
 4. Install metal coping allowing 1/2 inch spaces between segments. Lock coping onto cleat and install appropriate fasteners through the interior fascia spaced 24 inches on center in enlarged holes.
 5. Install cover plate centered over coping joint in continuous beads of specified Type B sealant, placed approximately one (1) inch from cover edges. Refer to SMACNA for alternate joints as required by length.
 6. Install appropriate fastener through neoprene washer and cover plate between coping segments.
 7. Accommodate building wall expansion joints by terminating coping joints and cleats either side of expansion joint. Do not run coping or cleats continuous across joints. Install coping cover plate to span across joint and lap coping on each side of joint a minimum of four (4) inches. Fasten cover plate on one (1) side of joint only. (Provide wall flashing membrane up and over parapet wall in accordance with manufacturer's detail.)

3.4 CLEANING AND PROTECTION

- A. Remove flux and residual acid immediately by neutralizing with baking soda and washing with clean water. Leave work clean of stains.
- B. Remove scraps and debris and leave work area clean.
- C. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes. Paint areas where finish is damaged on pre-finished metal by painting with a compatible paint in color to match undamaged finish.
- D. Prime soldered area of phosphatized metal after cleaning to prevent rusting.
- E. Paint metal flashings that have been soiled with bitumen with aluminized paint.
- F. Clean other work damaged or soiled by Work of this Section.
- G. Protect finished work from damage.

END OF SECTION

SECTION 07 72 00 - ROOF ACCESSORIES

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 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

1.3 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

1.4 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.

1.5 PRE-INSTALLATION CONFERENCE

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

1.6 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: 24 gauge stainless 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 (Cannot be contractor built supports)

- A. Gas Pipe Supports:
 - 1. Provide strut and hanger type support with recycled plastics and carbon black for UV protection bases; Model Type SS100RA for lines 2-1/2 inches and smaller, Model Type SS1000H with clevis and swivel hanger for lines 3 inches and larger.
 - 2. As manufactured by Advanced Support Products. PHP Systems Design and Miro Industries Inc. are approved equal.
- B. Electrical Conduit / Condensate Lines:
 - 1. Provide strut type support with recycled plastics and carbon black for UV protection bases, install with hold clips ordered as an accessory; Model Type SS500A with strut. Model Type SS1000H with clevis and swivel hanger for lines 3 inches and larger.
 - 2. As manufactured by Advanced Support Products. PHP Systems Design and Miro Industries Inc. are 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 SS2000P with clevis and swivel hanger .
 - 2. As manufactured by Advanced Support Products. PHP Systems Design and Miro Industries Inc. are 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.

2.5 RETROFIT ROOF DRAINS

- 1. Retrofit Roof Drains: "Hercules RetroDrain" as manufactured by OMG, Inc. or Architect approved equal.
 - 2. Size: To match existing roof drain sizes
 - 3. Compliance:
 - a. ANSI / SPRI RD-1.
 - b. ULC / ORD-C790.4.
 - 4. Drain Body:
 - a. Material: 1-piece, 11-gauge (0.125-inch) spun aluminum.
 - b. Flange: 17-1/2-inch diameter.
 - 5. Drain Stem Length: 12 inches
 - 6. Flange Includes: Six 2-1/2-inch-long aluminum studs.
 - 7. Sump Area: Depressed.
- A. Strainer Dome:
 - 1. Material: Cast aluminum.
 - 2. Height: 7.25 inches.
 - 3. Outside Base Diameter: 9.77 inches.
- B. Clamping Ring:

1. Material: Cast aluminum.
 2. Gravel Stop Height: 1.2 inches.
 3. Drainage Slots: 18 V-shaped.
 4. Bosses: 6, to accept studs on flange.
- C. Backflow Seal:
1. Compression Seal: Watertight, "U-Flow" mechanical seal.
 2. Material: Polyamide and EPDM rubber.
 3. Required for Activation: "U-Flow" screwdriver.
- D. Hardware:
1. Locknuts: 6, stainless steel, for studs.
 2. Screws: 3, stainless steel, to attach strainer to clamping ring.
- E. Overflows:
1. At overflow locations; provide overflow collar extension
 2. Constructed of spun aluminum

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 22 33 - ROOF SCUTTLE (HATCHES) AND HEAT/SMOKE VENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 RELATED WORK

- A. Section 05 50 00 - Miscellaneous Metals
- B. Section 06 10 00 - Rough Carpentry
- C. Section 07 52 19 – Modified Bitumen Membrane Roofing System

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: Include materials, opening sizes, fabrication details, hardware, attachments, related and adjacent work, and finishes.

1.4 WARRANTY

- A. Warrant the work specified herein for five (5) 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, the following:
 - 1. Faulty, improper or inadequate attachment or installation.
 - 2. Difficult or noisy operation.
 - 3. Noticeable deterioration of finish.
 - 4. Leakage of water into the building or within the construction.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Specifications are based on products manufactured by The Bilco Company.
- B. Manufacturers listed below whose products are equivalent to those specified are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing equivalent products to those specified and comply with Division 1 requirements regarding substitutions to be considered.
 - 1. Acudor Products Inc.
 - 2. Babcock-Davis Hatchways, Inc.
 - 3. Dur-Red Products
 - 4. J. L. Industries, Inc.
 - 5. Karp Associates, Inc.
 - 6. Nystrom Building Products

2.2 ROOF SCUTTLES (HATCHES)

- A. Size: 2 feet-6 inches x 3 feet-0 inches, unless shown otherwise.
- B. Thermally Broken Cover: Shall be 11 gauge aluminum with 3" concealed polyisocyanurate insulation, 5" beaded, overlapping flange, fully welded at corners, and internally reinforced for 40 psf live load., fully covered and protected by an aluminum liner.
- C. Thermally Broken Curb: Shall be 12 inches in height and of 11 gauge aluminum. It shall be formed with a 5-1/2 inch flange with holes provided for securing to the roof deck. Curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, full welded at the corners for weathertightness. Capflashing shall be equipped with the Bilclip™ flashing system, including stamped tabs and Pak-Rope. Insulation on the exterior of the curb shall be rigid fiber board one (3) inches in thickness.
- D. Thermally Broken Scuttle (Hatch): Shall be completely assembled with heavy pintle hinges, positive snap latch with turn handles, padlock hasps inside and outside, and a mechanically retained thermoplastic rubber gasket. Compression spring operators enclosed in telescopic tubes shall be provided for smooth, easy and controlled door operation throughout the entire arc of opening and closing. Operation shall not be affected by temperature. Cover shall be equipped with an automatic hold-open arm complete with red vinyl grip handle to permit easy release and one-hand control of the cover to its closed and latched position. All hardware shall be stainless steel. Scuttle factory finish shall be mill finish aluminum.
- E. Approved Model / Manufacturer: Type No. "S-50" Roof Scuttles (Hatches) for ladder access, or Architect approved equal.
- F. Ladder: As specified in Section 05 50 00, Miscellaneous Metals. Ladder shall be oriented and mounted along the short dimension of the hatch.
- G. Fall Protection Safety Rail and Ladder Extension: 30"x36" Model SP-3036 Made by **SafePro L.C.**

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Roof hatches and heat / smoke vents shall be welded to structural steel frame of building.
- B. Install hatches and heat / smoke vents in accordance with details on drawings, approved shop drawings, and manufacturer's instructions.

END OF SECTION

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes: Requirements including but not limited to:
 1. Control and expansion joints on exposed surfaces.
 2. Perimeter joints between wall surfaces and frames of doors and openings.
 3. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 4. Joints indicated or as necessary.
 5. Accessories necessary for a complete installation.

1.3 RELATED SECTIONS

- A. Section 07 62 00 – Roof related sheet metal.

1.4 SUBMITTALS

- A. Product Data: Technical data for each joint sealant product. Submit written certification from manufacturers of sealants attesting products are suitable for use indicated, verified through in house testing laboratory.
 1. Written certification from manufacturers of joint sealants attesting that products comply with specification requirements and suitable for use indicated verified through manufacturers testing laboratory within the past 36 months or since most recent reformulation, whichever is most recent.
 - a. Complete instructions for handling, storage, mixing, priming, installation, curing and protection of each type of sealant.
 - b. Manufacturer's letter, clearly indicating proposed lot numbers of each sealant supplied and expiration date sequence.
 - c. Instructions for handling, storage, mixing, priming, installation, curing, and protection of each type of sealant.
 2. Recycled Content:
 - a. Indicate recycled content; indicate percentage of preconsumer and postconsumer recycled content per unit of product.
 - b. Indicate relative dollar value of recycled content product to total dollar value of product included in project.
 - c. If recycled content product is part of an assembly, indicate the percentage of recycled content product in the assembly by weight.
 - d. If recycled content product is part of an assembly, indicate relative dollar value of recycled content product to total dollar value of assembly.
 3. Local/Regional Materials:
 - a. Sourcing location(s): Indicate location of extraction, harvesting, and recovery; indicate distance between extraction, harvesting, and recovery and the project site.
 - b. Manufacturing location(s): Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site.

- c. Product Value: Indicate dollar value of product containing local/regional materials; include materials cost only.
 - d. Product Component(s) Value: Where product components are sourced or manufactured in separate locations, provide location information for each component. Indicate the percentage by weight of each component per unit of product.
4. VOC Data: Submit manufacturer's product data for sealants. Indicate VOC limits of the product. Submit MSDS highlighting VOC limits.
 5. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.
- B. Certificates and Reports:
1. Product Certificates: Manufacturer's product certificate for each kind of joint sealant and accessory.
 2. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.
 3. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
 4. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - a. Materials forming joint substrates and sealant backings have been tested for compatibility and adhesion with sealants.
 - b. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
 5. Preconstruction Field Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified.
 6. Field Adhesion Test Reports: For each sealant application tested.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Firm having minimum 5 years documented experience and specializing in the installation of sealants.
1. Exposed sealant work (sealants used for air and weatherseals external to curtain wall systems at perimeter, metal panel to panel joints) shall be performed by a single (i.e. one) firm specializing in the installation of sealants who has successfully produced work comparable to project.
 2. Concealed sealant work (sealants which are internal to metal framed curtain wall systems, skylights, and providing an air seal) shall be the responsibility of the subcontractor providing erection of the respective system.
- B. Source Limitations: Obtain each type of joint sealant from a single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
 2. Test according to SWRI Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion in peel, and indentation hardness.
- D. Environmental Requirements:
1. Toxicity/IEQ: Comply with applicable regulations regarding toxic and hazardous materials.
 - a. VOC Content of Interior Sealants: Sealants and sealant primers complying with limits for VOC content for SCAQMD when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1) Sealants: 250 g/L.
 - 2) Sealant Primers for Nonporous Substrates: 250 g/L.

3) Sealant Primers for Porous Substrates: 775 g/L.

- b. Sealants containing aromatic solvents, fibrous talc, formaldehyde, halogenated solvents, mercury, lead, cadmium, chromium and their compounds, are not permitted.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer written instructions to prevent deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 degrees F (4.4 degrees C).
 2. When joint substrates are wet. Should joints or backing materials become wet, remove and replace backing material with new.
- B. Joint Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
- C. Joint Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.8 WARRANTY

- A. Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealant work which has failed to provide a weathertight system within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.
- B. Warranties: Written warranties (weatherseal and stain resistance), signed by sealant manufacturer agreeing to furnish joint sealants to repair or replace those that fail to provide airtight and watertight joints, or fail in adhesion, cohesion, abrasion resistance, stain resistance, weather resistance, durability, or appear to deteriorate in manner not specified in the manufacturer's data as an inherent quality of the material within specified warranty period.
1. Warranty Period: 5 years from date of Substantial Completion.
- C. Warranties specified exclude deterioration or failure of sealants from:
1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Compatibility:** Provide joint sealants, backings, and related materials compatible with one another and with joint substrates under conditions of service and application, as stated by sealant manufacturer's published data, and as substantiated by the manufacturer for each application through testing.
- B. **Liquid Applied Sealants:** Comply with ASTM C 920 and requirements indicated for each liquid applied sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- C. **Stain Test Response Characteristics:** For sealants in contact with porous substrates, provide nonstaining products that have undergone testing according to ASTM C 1248 and do not stain porous joint substrates.
- D. **Suitability for Contact with Food:** Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- E. **Colors:** For fully concealed joints, provide standard color of sealant that has the best overall performance characteristics for the application shown. For exposed joints, match adjacent surface. For exposed joints, submit color samples to architect for approval, from manufacturer's full line of standard colors.
- F. **Manufacturer's Representative:** Use sealant produced by manufacturer who agrees to send a qualified technical representative to site upon request for the purpose of rendering advice concerning the recommended installation of manufacturer's materials.
- G. **Sealants:** Self leveling compounds for horizontal joints in pavements and nonsag compounds elsewhere except as shown or specified.
- H. **Polyurethane Sealants:** ASTM C920, Type M, Grade NS, Class 25; use NT, M, A and O.
 - 1. **Use:** Typical Wall and Floor Joints (Two part polyurethane sealants).
 - 2. **Properties: Performance:** Nonstain, nonbleed, nonstreaking to sealed and adjacent substrates.
 - 3. **Products and Manufacturers:**
 - a. BASF Building Systems; Sonolastic NP-2.
 - b. Pecora Corporation; Dynatred.
 - c. Sika Corporation, Construction Products Division; Sikaflex 2c NS or Sikaflex 2c NS TG as applicable.
- I. **Sealant Backing:** Provide sealant backings that are nonstaining; compatible with joint substrates, sealants, primers, and joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 1. **Cylindrical Sealant Backings:** Preformed, compressible, resilient, nonstaining, nonwaxing, nonextruding backings of flexible plastic foam complying with ASTM C 1330, and of type indicated below. Select shape and density of cylindrical sealant backings in consultation with the manufacturer for proper performance in specific condition of use in each case.
 - 2. **Type C:** Closed cell polyethylene foam material with surface skin, nonabsorbent to liquid water and gas, nonoutgassing in unruptured state; one of the following:
 - a. HBR Closed Cell Backer Rod; Nomaco, Inc.
 - b. Sonolastic Closed-Cell Backer-Rod; BASF Construction Chemicals.
- J. **Weep and Vent Tubes:** Clear plastic (PVC) tubing, minimum 1/4 inch (6.35 mm) inside diameter, and length required to extend between exterior face of sealant and open cavity behind. At window and

curtain wall systems, where required by system designer, provide gutter termination of tube with preformed nipples suitable for sealing to gutter.

K. Miscellaneous Materials:

1. Primer: Material recommended, as verified through compatibility and adhesion testing, by joint sealant manufacturer for the substrates indicated to be sealed.
2. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
3. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and which will not stain nor mar the finish of surface adjacent to joints to which it is applied.
4. Cork Joint Filler: Resilient and nonextruding, ASTM D1752, Type II.
5. Bond Breaker Tape: Polyethylene, TFE fluorocarbon, or plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants for compliance with requirements for joint configuration, installation tolerances, and conditions affecting sealant performance. Proceed with installation after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with the recommendations of joint sealant manufacturer and requirements:
1. Remove foreign material from joint substrates interfering with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), existing joint sealants, oil, grease, water, surface dirt, and frost.
 2. Clean concrete, masonry, unglazed surfaces of tile and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil free compressed air.
 3. Remove laitance and form-release agents from concrete.
 4. Clean metal, glass, porcelain enamel, glazed surfaces of tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming (Elastomeric Sealants Only): Prime joint substrates where recommended in writing by joint sealant manufacturer, based on prior testing and experience. Apply primer to comply with joint sealant manufacturer's written instructions. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

- A. Silicone Glazing Sealants: Refer to Section 08 80 00.
- B. Comply with joint sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- C. Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants applicable to materials, applications, and conditions indicated.
- D. Sealant Backings: Install sealant backings to support sealants during application and at position necessary to produce cross sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings. Trim for tight fit around obstructions or elements penetrating the joint.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that become wet before sealant application and replace with dry sealant backings.
 - 4. Install bond breaker tape behind sealants where backings are not used between sealants and back of joints.
- E. Weeps and Vents: Install weeps and vents into joints at the same time sealants are being installed. Locate weeps and vents spaced recommended by sealant manufacturer and the window and curtain wall fabricator and erector. Do not install weeps and vents at outside building corners. Do not install vents at horizontal joints immediately below shelf angles, sills, and through wall flashings.
- F. Sealants: Install sealants by proven techniques resulting in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at same time sealant backings are installed.
 - 1. Apply sealants in depth in accordance with manufacturer's recommendations and recommended general proportions and limitations.
 - 2. Apply elastomeric sealants, in joints not subject to traffic or abrasion, to a depth equal to 50% of the joint width, but not less than 1/4 inch (6 mm) and not more than 1/2 inch (13 mm).
 - 3. Apply nonelastomeric sealants to a depth approximately equal to the joint width.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform, beads to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces. Tool exposed surfaces of sealants to the profile shown, or if none is shown, tool slightly concave.
 - 1. Use masking tape to protect adjacent surfaces of recessed tooled joints.
 - 2. Provide a slight wash on horizontal joints where horizontal and vertical surfaces meet.
 - 3. Against rough surfaces or in joints of uneven widths avoid the appearance of excess sealant or compound by locating the compound or sealant well back into joint wherever possible.
- H. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping. Do not pull or stretch material. Produce seal continuity at ends, turns, and intersections of joints. For applications at low ambient temperatures, apply heat to sealant in compliance with sealant manufacturer's written instructions.
- I. Acoustical Sealant Installation: At sound rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer written recommendations.

3.4 FIELD QUALITY CONTROL

- A. Field Adhesion Testing: Field test exterior wall joint sealant adhesion to joint substrates:
1. Extent of Testing: Test completed and cured sealant joints:
 - a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each 1000 feet (300 m) of joint length thereafter or 1 test per each floor per elevation.
 2. Test Method: Test joint sealants according to Method A, Field Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer field adhesion hand pull test criteria.
 4. Record test results in a field adhesion test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure original sealant surfaces are clean and new sealant contacts original sealant.
- B. Evaluation of Field Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 SITE ENVIRONMENTAL PROCEDURES

- A. Indoor Air Quality: Provide temporary ventilation during work. Coordinate interior application of sealants with interior finishes schedule.

3.6 CLEANING AND PROTECTION

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
- B. Protect joint sealants during and after curing from contact with contaminating substances and from damage so sealants are without deterioration or damage at time of Substantial Completion. If, despite protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

END OF SECTION 07 92 00