Addendum No. 01

July 12, 2022

to

Galveston ISD RFQ#2021-22-020

RFQ for Design Build Services

New Kermit Courville Stadium

Modifications to the RFQ:

1. Wherever AIA A101-2017 is referenced in the RFQ, replace with AIA A141-2014, attached to this Addendum No. 1.
2. Exhibit Q is replaced with the attached AIA A141-2014.
3. Exhibit R is no longer required for the Project, as the General Conditions for the Project are contained in AIA A141-2014 issued as Exhibit Q.
4. Exhibit T – General Conditions is replaced with the list of General Conditions attached as Exhibit E to the AIA A141-2014
5. Exhibit U – Facility Design Standards is attached as Exhibit D to the AIA A141-2014
6. Exhibit V - Design Criteria Package is attached as Exhibit B to the AIA A141-2014

Modifications to the Drawings:

1. None

Modifications to the Specifications:

1. None

Questions and Clarifications:

1. None

Acknowledge this Addendum in your submission

End of Addendum

DRAFT

AIA® Document A141™ – 2014

Standard Form of Agreement Between Owner and Design-Builder

AGREEMENT made as of the «10th » day of «July » in the year «2022 »
(In words, indicate day, month and year.)

BETWEEN the Owner (sometimes also referred to as the "District"):
(Name, legal status, address and other information)

«Galveston Independent School District»

and the Design-Builder:
(Name, legal status, address and other information)

«TBD »

for the following Project:
(Name, location and detailed description)

«New High School Stadium, 2022 Bond Program »

The Owner and Design-Builder agree as follows.

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.

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

Consultation with an attorney is also encouraged with respect to professional licensing requirements in the jurisdiction where the Project is located.

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TABLE OF ARTICLES

TABLE OF EXHIBITS

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Owner's Criteria

See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.1 The Owner's program for the Project:

See RFP and Exhibit B, Design Criteria Package.

§ 1.1.2 The Owner's design requirements for the Project and related documentation:

See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.3 The Project's physical characteristics:
See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.4 The Owner's anticipated Sustainable Objective for the Project, if any:

N/A

§ 1.1.5 Incentive programs the Owner intends to pursue for the Project, including those related to the Sustainable Objective, and any deadlines for receiving the incentives that are dependent on, or related to, the Design-Builder's services, are as follows:

N/A

§ 1.1.6 The Owner's budget for the Work to be provided by the Design-Builder is set forth below:
See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.7 The Owner's design and construction milestone dates:

.1 Design phase milestone dates:

See RFQ and Exhibit B, Design Criteria Package.

.2 Submission of Design-Builder Proposal:

See RFQ and Exhibit B, Design Criteria Package.

.3 Phased completion dates:

See RFQ and Exhibit B, Design Criteria Package.

.4 Substantial Completion date:

See RFQ and Exhibit B, Design Criteria Package.

.5 Other milestone dates:

See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.8 Design-Builder shall retain and/or provide Architects, Consultants and Contractors at the Design-Builder's cost as necessary to complete the Work consistent with the terms and conditions contained herein. Each professional shall be designated in the Design-Build Amendment.

§ 1.1.9 Additional Owner's Criteria upon which the Agreement is based:

See RFQ and Exhibit B, Design Criteria Package.

§ 1.1.10 The Design-Builder shall confirm that the information included in the Owner's Criteria complies with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, including without limitation those listed in Section 3.1.1 of this Agreement.

§ 1.1.10.1 If the Owner's Criteria conflicts with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Design-Builder shall notify the Owner of the conflict in writing.

§ 1.1.11 If there is a change in the Owner's Criteria, the Owner and the Design-Builder shall execute a Modification in accordance with Article 6.

§ 1.1.12 If the Owner and Design-Builder intend to transmit Construction Documents or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions. Unless otherwise agreed, the parties will use AIA Document E203™–2013 to establish the protocols for the development, use, transmission, and exchange of digital data and building information modeling.

§ 1.2 Project Team

§ 1.2.1 The Owner identifies the following representative in accordance with Section 7.1.1:
(List name, address and other information.)

« »
« »
«
»
«Telephone: »
«Facsimile: »

§ 1.2.2 The persons or entities, in addition to the Owner's representative, who are required to review the Design-Builder's Submittals are as follows:
(List name, address and other information.)

« Lockwood, Andrews & Newnam, Inc.LAN»

§ 1.2.3 The Owner will retain the following consultants and separate contractors:
(List discipline, scope of work, and, if known, identify by name and address.)

« Owner shall be represented on the Project by an architect or engineer independent of the Design-Builder in accordance with Section 2269.305 of the Texas Government Code, who shall be referred to herein as "Owner's Architect" or "Program Manager". Owner designates the following:
Lockwood, Andrews & Newnam, Inc.LAN »

§ 1.2.4 The Design-Builder identifies the following representative in accordance with Section 3.1.2:
(List name, address and other information.)

«TO BE COMPLETED BY DESIGN-BUILDER »
« »
« »
« »
« »
« »

§ 1.2.5 Neither the Owner's nor the Design-Builder's representative shall be changed without ten days' written notice to the other party. The Design-Builder's senior principal or other representative as defined herein who is responsible for managing the Project shall not be changed without the prior written approval of the Owner. The day-to-day Project team will be led by the senior principal or other representative as identified herein unless otherwise directed by Owner or prevented by factors beyond the control of the Design-Builder.

§ 1.3 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Section 14.3, the method of binding dispute resolution shall be the following:

(Check the appropriate box. If the Owner and Design-Builder do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[« »] Arbitration pursuant to Section 14.4

[« X »] Litigation in a court of competent jurisdiction

[« »] Other: *(Specify)*

« »

§ 1.4 Definitions

§ 1.4.1 Design-Build Documents. The Design-Build Documents consist of this Agreement between Owner and Design-Builder and its attached Exhibits (hereinafter, the "Agreement"); other documents listed in this Agreement; Addenda issued prior to the execution of this Agreement; the Owner's solicitation documents for the Project including the request for proposals ("RFQ/RFP"); the Design Criteria Package issued by the Owner, attached as Exhibit B, hereto; the Owner's Technical Design Guidelines, attached as Exhibit D, hereto, the Project Manual, including the Drawings and Specifications, to the extent not inconsistent with the Agreement, the RFQ/RFP and the Exhibits; the Design-Builder's proposal, to the Extent not inconsistent with the Agreement, the RFQ/RFP and the Exhibits; the Design-Builder's bonds and proof of insurance, to the extent not inconsistent with the Agreement and Exhibits; any other Exhibits to the Agreement; and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract approved and signed by both parties in accordance with the terms and conditions set forth herein, including the Design-Build Amendment, (2) a Change Order, or (3) a Change Directive. The Design-Build Documents shall also sometimes be referred to throughout the Design-Build Documents as the Contract Documents, and these terms are interchangeable.

§ 1.4.2 The Contract. The Design-Build Documents form the Contract. The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Design-Build Documents shall not be construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Design-Builder, provided that Owner may be a third-party beneficiary under any agreements between Design-Builder and a third party or affiliate of Design-Builder related to the right for Owner to purchase the Property pursuant to the terms herein.

1.4.2.1 To be effective, all Contract Documents requiring signatures must be signed first by the Design-Builder and then by the Owner's authorized representative, after approval or delegation of authority by Owner's Board of Trustees. If an approved Contract Document requiring Design-Builder's signature has not been signed, then the missing signature shall be provided within a reasonable period of time. Failure of Design-Builder to sign an approved Contract Document after notice and a reasonable opportunity to sign, shall be considered a material breach of the Contract by Design-Builder.

1.4.2.2 During the course of the Work, should any conflict be found in or between the Contract Documents, the Design-Builder shall be deemed to have estimated the Work on the basis of the greater quantity or better quality, or the most stringent requirement. In case of such conflict, the Owner, with the assistance of Owner's Architect, may interpret or construe the documents so as to obtain the most substantial and complete performance of the Work consistent with the Contract Documents and reasonably inferable therefrom, in the best interest of Owner, and the Owner's Architect's interpretation shall be final. The terms and conditions of this clause shall not relieve any part of any other obligation under the Contract Documents.

§ 1.4.3 The Work; Construction Documents. The term "Work" means the design, construction and related services required to fulfill the Design-Builder's obligations under the Design-Build Documents, whether completed or partially completed, and includes all labor, materials, equipment, parts, supplies, skills, supervision, transportation, services, and other facilities and things provided or to be provided by the Design-Builder as necessary to carry out the obligations of the Contract. The Work may constitute the whole or a part of the Project. The Work includes all

of Design-Builder's responsibilities as to all labor, parts, supplies, skill, supervision, transportation services, storage requirements, and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract Documents and the Construction Documents, and all other items of cost or value needed to produce, construct, and fully complete the public Work identified by the Contract Documents and the Construction Documents. "Construction Documents" means: all Drawings, Specifications, geotechnical reports, surveys, AHERA reports, Addenda, submittals, transmittals, deliverables, instructions to Contractors, and other documents, including those in electronic form, prepared by the Design-Builder and the Design-Builder's consultants and which set forth in detail the requirements for construction of the Project. The Construction Documents shall include Drawings and Specifications that establish, in detail, the quality levels of materials and systems required for the Project. The Construction Documents shall reflect all agreements between Owner and Design-Builder concerning Owner's budgetary constraints, programmatic needs and expectations as to quality, functionality of systems, maintenance costs, and usable life of equipment and facilities. Said Construction Documents shall reflect the Owner's educational program and educational specifications, the State educational adequacy standards in 19 TAC § 61.1040, and the standards set forth in this Agreement. The Design-Builder shall provide Construction Documents which are sufficient to complete construction of the Project, are free from material defects or omissions, and which shall comply with all applicable laws, ordinances, codes, rules, and regulations, as of the date of issuance of Construction Documents.

§ 1.4.4 The Project. The Project is the total design and construction of which the Work performed under the Design-Build Documents may be the whole or a part, and may include design and construction by the Owner and by separate contractors.

§ 1.4.5 Construction Documents. Construction Documents are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Design-Builder, Contractor(s), Architect, and Consultant(s) under their respective agreements. Construction Documents may include, without limitation, studies, surveys, models, sketches, drawings, specifications, digital models and other similar materials.

§ 1.4.6 Submittal. A Submittal is any submission to the Owner for review and approval demonstrating how the Design-Builder proposes to conform to the Design-Build Documents for those portions of the Work for which the Design-Build Documents require Submittals. Submittals include, but are not limited to, shop drawings, product data, and samples. Submittals are not Design-Build Documents unless incorporated into a Modification.

§ 1.4.7 Owner. The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Design-Build Documents as if singular in number. The Board of Trustees ("Board"), by majority vote, is the only representative of the Owner, a Texas independent school district, having the power to enter into a contract, to approve changes in the scope of the Work, to execute a change order of $50,000.00 or more, and to agree to an extension to the date of Final or Substantial Completion, except as otherwise delegated by the Board. [Do we want to specifically delegate more authority in this Agreement?] The Board designates as its authorized representative for the daily administration of this Agreement the individual identified in Article 1.2.1. Owner's Board of Trustees hereby delegates to the Superintendent of Schools or designee the authority to approve changes to the Work where such changes are within the Owner's contingency or the Design-Builder's contingency, and will not increase the dates for Substantial or Final Completion. The term "Owner" means the Owner or the Owner's authorized representative.

§ 1.4.8 Design-Builder. The Design-Builder is the person or entity identified as such in the Agreement and is referred to throughout the Design-Build Documents as if singular in number. The term "Design-Builder" means the Design-Builder or the Design-Builder's authorized representative.

§ 1.4.9 Consultant. A Consultant is a person or entity providing professional services for the Design-Builder for all or a portion of the Work, and is referred to throughout the Design-Build Documents as if singular in number. To the extent required by the relevant jurisdiction, the Consultant shall be lawfully licensed to provide the required professional services.

§ 1.4.10 Architect. The Architect is a person or entity providing design services for the Design-Builder for all or a portion of the Work, and is lawfully licensed to practice architecture in the applicable jurisdiction. The Architect is referred to throughout the Design-Build Documents as if singular in number. The Design-Builder is fully liable to the Owner for all duties and liabilities of the Architect.

§ 1.4.11 Contractor. A Contractor is a person or entity performing all or a portion of the construction, required in connection with the Work, for the Design-Builder. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor is referred to throughout the Design-Build Documents as if singular in number and means a Contractor or an authorized representative of the Contractor. The Design-Builder is fully liable to the Owner for all duties and liabilities of any Contractor.

§ 1.4.12 Confidential Information. Confidential Information is information containing confidential or business proprietary information that is clearly marked as "confidential."

§ 1.4.13 Contract Time. Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, as set forth in the Design-Build Amendment for Substantial Completion of the Work.

§ 1.4.14 Day.

§ 1.1.14.1 The term "day" as used in the Design-Build Documents shall mean calendar day unless otherwise specifically defined.

§ 1.1.14.2 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.

§ 1.1.14.3 Holidays: The days officially recognized by the construction industry in this area as a holiday; 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.

§ 1.1.14.4 Regular Work Days: All calendar days except holidays and Sundays. Requests for extensions of time shall be requested on the basis of Regular Work Days

§ 1.1.14.5 Anticipated Adverse Weather Days: An allowance of Regular Work Days established as probable days lost due to weather delays; said allowance to be included in the Contractor's Completion Time.

§ 1.1.14.6 Adverse Weather Days: Regular Work Days when rain, flooding, snow, unusually high winds, excessively wet grounds, or similar circumstances prevent progress on Critical Path portions of the Work. The Contractor will be entitled to an extension of the Contract Time for the net additional time, if any, which results from deducting the amount of Anticipated Adverse Weather Days from the total amount of approved Adverse Weather Days.

§ 1.1.14.6.1 Further, Adverse Weather is defined as the occurrence of one or more of the following conditions within a twenty-four (24) hour day that prevents construction activity exposed to weather conditions or access to the site:

1. Precipitation (rain, snow, or ice) in excess of twenty-five one hundredths of an inch (0.25") liquid measure, hereafter referred to as Standard Baseline.
2. Temperatures that do not rise above that required for the day's construction activity, if such temperature requirement is specified or accepted as standard industry practice.
3. Sustained wind in excess of twenty-five (25) m.p.h.
4. "dry-out" or "mud" days resulting from precipitation that occur beyond the standard baseline; only if there is a hindrance to site access or sitework and Contractor has taken all reasonable accommodations to avoid such hindrance; and, at a rate no greater than 1 make-up day for each day or consecutive days of precipitation beyond the Anticipated Adverse Weather Days that total 1.0 inch or more, liquid measure.
5. Adverse weather prevents work on the project for fifty percent (50%) or more of the Contractor's scheduled work day and critical path construction activities were included in the day's schedule, including a weekend day or holiday if Contractor has scheduled construction activity that day.

§ 1.1.14.7 Net Days: Actual Adverse Weather Days experienced to date less Anticipated Adverse Weather Days anticipated to date. Actual Instruction Days experienced to date less Anticipated Instruction Days anticipated to date.

§ 1.1.14.8 Instruction Days: Regular Work Days when the Owner operations prevent progress on Critical Path portions of the Work. The Contractor will be entitled to an extension of the Contract Time for the net additional time, if any, which results from deducting the amount of Anticipated Instruction Days from the total amount of approved Instruction Days.

§ 1.1.14.9 The term "business day" is a day the Owner's Administration Building is scheduled to be open for normal business purposes, unless closed by the Owner's Superintendent of Schools or designee for inclement weather or other reason. Days on which the Administration Building is normally closed are Thanksgiving Break, Winter Break, Spring Break, and Summer Break, as well as other federal, state or local days specified in the calendar approved by the Owner's Board of Trustees on an annual basis. A business day does not include a day on which the Owner's Administration Building is open only for the purposes of conducting candidate filing, early voting, elections, or other special events.

§ 1.4.15 Contract Sum. The Contract Sum is the amount to be paid to the Design-Builder for performance of the Work after execution of the Design-Build Amendment, as identified in Article A.1 of the Design-Build Amendment.

1.4.16 Addenda. Addenda are written or graphic instrument issued prior to the execution of the Contract, which modify or interpret the bidding or proposal documents, including Drawings and Specifications, by additions, deletions, clarifications, or corrections. Addenda will become part of the Contract Documents and Construction Documents when the Agreement is executed. The Contractor and subcontractors shall include all addenda items on their copies of the Drawings and Specifications.

§ 1.1.17 The term "Direct Labor Cost" means the actual and verifiable salaries and wages (basic, premium and incentive) paid to personnel, but does not include indirect payroll related costs, fringe benefits (Labor Cost Burden).

§ 1.1.18 The term "Labor Cost Burden" means the actual and verifiable cost of customary and statutory benefits including, but not limited to, social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Labor Cost Burden excludes all forms of general liability policy premiums and deductibles, safety training, tuition cost reimbursement, small tool expense, and union dues. The Owner reserves the right to request evidence of Labor Cost Burden at any time from Contractor and Subcontractors.

1.4.19 Design Criteria Package. The Work, including, without limitation, preparation of the Construction Documents, shall in all respect be performed consistent with the Design Criteria Package provided by the Owner in Exhibit B. The Design Criteria Package is fully incorporated herein and shall form a part of the Design Build Documents, and all obligations set forth therein shall be part of the contractual duties of the Design-Builder. Any reference in the Design Criteria Package to Architect shall mean the Design Builder's Architect, and all requirements and liabilities of said Architect shall be those of Design Builder.

ARTICLE 2 COMPENSATION AND PROGRESS PAYMENTS

§ 2.1 Compensation for Work Performed Prior To Execution of Design-Build Amendment

§ 2.1.1 There shall be no amounts due or payments made for any Work performed prior to Execution of the Design-Build Amendment. If the Parties fail to execute a Design-Build Amendment in accordance with the terms herein, the Owner shall have no further obligation to the Design Builder, including that the Owner shall have no financial obligation to the Design-Builder. Any Work performed prior to execution of the Design Build Amendment shall be done at the Design Builder's risk, and Design Builder fully releases Owner from any financial liability for Work performed prior to the Design Builder Amendment.

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§ 2.1.2

Intentionally deleted.

§ 2.1.3 Compensation for Reimbursable Expenses Prior To Execution of Design-Build Amendment

Intentionally deleted.

§ 2.1.4 Payments to the Design-Builder Prior To Execution of Design-Build Amendment

Intentionally deleted.

§ 2.1.4.2

Intentionally deleted.

§ 2.2 Contract Sum and Payment for Work Performed After Execution of Design-Build Amendment
For the Design-Builder's performance of the Work after execution of the Design Build Amendment, the Owner shall pay to the Design-Builder the Contract Sum in current funds as agreed in the Design-Build Amendment on a cost-plus-fee basis, with a Guaranteed Maximum Price.

ARTICLE 3 GENERAL REQUIREMENTS OF THE WORK OF THE DESIGN-BUILD CONTRACT
§ 3.1 General
§ 3.1.1 The Design-Builder shall review and shall perform its services in compliance with all applicable national, federal, state, municipal, and state of Texas laws, regulations, codes, ordinances, orders, and with those of any other body having jurisdiction. The Design-Builder shall review and be responsible for compliance with laws, codes, and regulations applicable to the Design-Builder's services, including without limitation, school facility standards found in 19 Texas Administrative Code, Chapter 61, subchapter CC and Texas Health and Safety Code Section 341.065, if applicable to this Project. The Design-Builder shall respond in the design of the Project to requirements imposed by governmental authorities having jurisdiction over the Project. Design-Builder shall comply with all policies, regulations, and rules of the Owner including, but not limited to, those related to employee conduct (such as prohibitions against alcohol, weapons, drugs, pornography, harassment, and tobacco on school property), and fraud and financial impropriety. If applicable, Design-Builder or its Architects shall certify that it has reviewed the standards contained in 19 Texas Administrative Code, Chapter 61, subchapter CC, and used the best professional judgment and reasonable care consistent with the practice of architecture or engineering in the State of Texas in executing the Construction Documents. Design-Builder's signature and seal on the design-build documents shall certify compliance. Design-Builder shall perform a building code search under applicable regulations that may influence the Project, and shall certify that the design has been researched before it is final. Design-Builder shall design the Project in such a manner that the Project or each part of the Project is readily accessible to and usable by individuals with disabilities, in compliance with the Americans With Disabilities Act, federal regulations interpreting the Americans With Disabilities Act, Texas Government Code Chapter 469, and all requirements or standards of the Texas Department of Licensing and Regulation. It shall be the responsibility of Design-Builder to address revisions or amendments to applicable codes or standards which arise after the date of execution of the Agreement. The Design-Builder shall, at appropriate times, contact the governmental authorities required to coordinate and/or approve the Construction Documents and the entities providing utility services to the Project. In designing the Project, the Design-Builder Architect shall respond to applicable design requirements imposed by such governmental authorities and by such entities providing utility services.

§ 3.1.2 The Design-Builder shall designate in writing a representative who is authorized to act on the Design-Builder's behalf with respect to the Project. The Owner may rely on representations and agreements made by said representative.

§ 3.1.3 The Design-Builder shall perform the Work in accordance with the Design-Build Documents in a good and workmanlike manner and in an expeditious and economical manner consistent with the interest of the Owner; shall exercise the degree of care, skill, and diligence in the performance of the Work in accordance with and consistent with industry standards for similar projects; shall utilize its best skill, effort, and judgment in diligently performing the Work; and shall furnish efficient business administration and supervision. Workmanship shall be of a quality to produce satisfactory results. This shall include, but not be limited to, meaning that all materials shall be installed in a true and straight alignment, level and plumb; patterns shall be uniform; and joining of materials shall be flush and level, unless otherwise directed by the Owner or the Design-Build Documents. The Design-Builder shall not be relieved of the obligation to perform the Work in accordance with the Design-Build Documents by the activities, tests, inspections or approvals of the Owner. Design-Builder shall provide and pay for labor, materials, tools, equipment and machinery necessary for the proper execution and completion of the Work Services. The intent of the Design-Build Documents is to include all items necessary for the proper execution and completion of the Work

Services including, without limitation, all items and services that are consistent with, contemplated by, or reasonably inferable from the Design-Build Documents, whether or not such items and services are specifically mentioned therein.

§ 3.1.3.1 The Design-Builder shall perform the Work in compliance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Design-Builder performs Work contrary to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, the Design-Builder shall assume responsibility for such Work and shall bear the costs attributable to correction.

§ 3.1.3.2 Neither the Design-Builder nor any Contractor, Consultant, or Architect shall be obligated to perform any act which will violate any applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities. If the Design-Builder determines that implementation of any instruction received from the Owner, including those in the Owner's Criteria, would cause a violation of any applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Design-Builder shall notify the Owner in writing. Upon verification by the Owner that a change to the Owner's Criteria is required to remedy the violation, the Owner and the Design-Builder shall execute a Modification in accordance with Article 6.

§ 3.1.4 The Design-Builder shall be responsible to the Owner for acts and omissions of the Design-Builder's employees, Architect, Consultants, Contractors, and their agents and employees, and other persons or entities performing portions of the Work in the same manner as any acts or omissions performed by the Design-Builder.

§ 3.1.5 General Consultation. The Design-Builder shall hold weekly progress meetings at the Project site, or at such other time and frequency as are acceptable to or requested by the Owner. Progress of the work shall be reported at said meetings with reference to Design-Builder's Project schedule.

§ 3.1.6 When applicable law requires that services be performed by licensed professionals, the Design-Builder shall provide those services through qualified, licensed professionals.

§ 3.1.7 The Design-Builder, with the assistance of the Owner, shall prepare and file documents required to obtain necessary approvals of governmental authorities having jurisdiction over the Project.

§ 3.1.8 Progress Reports

§ 3.1.8.1 The Design-Builder shall keep the Owner informed of the progress and quality of the Work. On a monthly basis, or otherwise as agreed to by the Owner and Design-Builder, the Design-Builder shall submit written progress reports to the Owner, showing estimated percentages of completion and other information identified below:

- **.1** Work completed for the period;
- **.2** Project schedule status;
- **.3** Submittal schedule and status report, including a summary of outstanding Submittals;
- **.4** Responses to requests for information to be provided by the Owner;
- **.5** Approved Change Orders and Change Directives;
- **.6** Pending Change Order and Change Directive status reports;
- **.7** Tests and inspection reports;
- **.8** Status report of Work rejected by the Owner;
- **.9** Status of Claims previously submitted in accordance with Article 14;
- **.10** Cumulative total of the Cost of the Work to date including the Design-Builder's compensation and Reimbursable Expenses, if any;
- **.11** Current Project cash-flow and forecast reports; and
- **.12** Additional information reasonably requested by the Owner.

§ 3.1.8.2 The Design-Builder shall include the following additional information in its progress reports:

- **.1** Design-Builder's work force report;
- **.2** Equipment utilization report;
- **.3** Cost summary, comparing actual costs to updated cost estimates; and
- .4 Other information reasonably requested by Owner.

§ 3.1.9 Design-Builder's Schedules

§ 3.1.9.1 The Design-Builder, promptly after execution of the Contract, and as a prerequisite to the first application for payment, shall prepare and submit for the Owner's information an initial construction schedule for the Work

utilizing critical path method scheduling techniques. The initial schedule shall not exceed time limits set forth in the Design-Build Documents. The initial schedule shall thereafter be updated on a monthly basis and submitted with each application for payment. The receipt of an updated schedule with each application for payment shall be a condition precedent to the Owner's duty to make any payment pursuant to Article 9.

.1 Each schedule shall break the Work into a sufficient number of activities to facilitate the efficient use of critical path method scheduling by the Design-Builder and Owner. Each schedule activity shall be assigned a cost value consistent with the Schedule of Values so as to allow the Owner and Design-Builder to project cash flow for the Project.

.2 Each schedule shall include activities representing manufacturing, fabrication, or ordering lead time for materials, equipment, or other items for which the Architect is required to review submittals, shop drawings, product data, or samples.

.3 Each schedule, other than the initial schedule, shall indicate the activities, or portions thereof, which have been completed; shall reflect the actual time for completion of such activities; and shall reflect any changes to the sequence or planned duration of all activities.

.4 If any updated schedule exceeds the time limits set forth in the Design-Build Documents for completion of the Work, the Design-Builder shall include with the updated schedule a statement of the reasons for the anticipated delay in completion of the Work and the Design-Builder's planned course of action for completing the Work within the time limits set forth in the Design-Build Documents. If the Design-Builder asserts that the failure of the Owner to provide information to the Design-Builder is the reason for anticipated delay in completion, the Design-Builder shall also specify what information is required from the Owner.

.5 Neither the Owner or the Design-Builder shall have exclusive ownership of float time in the schedule, and all float time shall inure to the benefit of the Project. The Design-Builder agrees to use its best efforts not to sequence the Work or assign activity durations so as to produce a schedule in which more than one-fourth of the remaining activities have no float time.

.6 Submission of any schedule under this Contract constitutes a representation by the Design-Builder that: (1) the schedule represents the sequence in which the Design-Builder intends to prosecute the remaining Work; (2) the schedule represents the actual sequence and durations used to prosecute the completed work; (3) that to the best of its knowledge and belief the Design-Builder is able to complete the remaining Work in the sequence and time indicated; and, (4) that the Design-Builder intends to complete the remaining work in the sequence and time indicated.

§ 3.1.9.2 The Design-Builder shall perform the Work in strict accordance with the most recent schedules submitted to and approved by the Owner. In the event Design-Builder shall fall behind schedule at any time, for any reason, Owner shall be entitled to direct acceleration or resequencing of the Work to bring the Work back on schedule. Design-Builder shall be entitled to compensation from the Design-Builder Contingency, or if such contingency funds are exhausted, pursuant to Change Order, for such acceleration only (a) to the extent necessitated by excusable and compensable delays, and (b) to the extent of premium pay and additional equipment cost actually incurred by Design-Builder. In the event Design-Builder determines that the Substantial Completion or Final Completion cannot be met by resequencing the Work, then Design-Builder shall immediately provide to the Owner, and in any event within five (5) days after the date of receipt of any request by Owner for resequencing or acceleration, a plan to complete the Work in the shortest possible time. No approval by the Owner of any plan for resequencing or acceleration of the Work submitted by Design-Builder pursuant to this paragraph shall constitute a waiver by Owner of any damages or losses which Owner may suffer by reason of such resequencing or the failure of Design-Builder to meet Substantial Completion or Final Completion.

3.1.9.3 The construction schedule shall be in a detailed precedence - style critical path method ("CPM") format satisfactory to the Owner that shall also (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Design-Build Documents (hereinafter referred to as "Milestone Dates"). The schedule shall be transmitted in the form of Microsoft Project in the native file format. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion and Final Completion; (2) an apportionment of the Work by construction activity; (3) the time required for completion of each portion of the Work; (4) predecessors and successors; (5) phases; (6) baseline start and stop dates; (7) actual start and stop dates; (8) current start and stop dates; (9) delays; (10) critical path; (11) submittals; (12) extensions of the Contract Time authorized by Change Orders, (13) anticipated Adverse Weather Days, (14)

Anticipated Instructional Days, and (15) Owner activities. Upon review and acceptance by the Owner of the Milestone Dates, the construction schedule shall be deemed part of the Design-Build Documents and attached to the Exhibit A, Design-Build Agreement. If not accepted, the construction schedule shall be promptly revised by the Design-Builder in accordance with the recommendations of the Owner and resubmitted for acceptance. The Design-Builder shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions. In the event any progress report indicates any delays, the Design-Builder shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 3.1.10 Certifications. Upon the Owner's written request, the Design-Builder shall obtain from the Architect, Consultants, and Contractors, and furnish to the Owner, certifications with respect to the documents and services provided by the Architect, Consultants, and Contractors (a) that the documents or services to which the certifications relate (i) are consistent with the Design-Build Documents, except to the extent specifically identified in the certificate, and (ii) comply with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities governing the design of the Project; and (b) that the Owner and its consultants shall be entitled to rely upon the accuracy of the representations and statements contained in the certifications.

§ 3.1.11 Design-Builder's Submittals

§ 3.1.11.1 Prior to submission of any Submittals, the Design-Builder shall prepare a Submittal schedule, and shall submit the schedule for the Owner's approval. The Owner's approval shall not unreasonably be delayed or withheld. The Submittal schedule shall (1) be coordinated with the Design-Builder's schedule provided in Section 3.1.9.1, (2) allow the Owner reasonable time (at least 10-business days) to review Submittals, and (3) be periodically updated to reflect the progress of the Work. If the Design-Builder fails to submit a Submittal schedule, the Design-Builder shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of Submittals.

§ 3.1.11.2 By providing Submittals the Design-Builder represents to the Owner that it has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so in compliance with all laws and authorities described in Article 3.1.1 and (3) checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Design-Build Documents.

§ 3.1.11.3 The Design-Builder shall perform no portion of the Work for which the Design-Build Documents require Submittals until the Owner has approved the respective Submittal.

§ 3.1.11.4 The Work shall be in accordance with approved Submittals except that the Design-Builder shall not be relieved of its responsibility to perform the Work consistent with the requirements of the Design-Build Documents. The Work may deviate from the Design-Build Documents only if the Design-Builder has notified the Owner in writing of a deviation from the Design-Build Documents at the time of the Submittal and a Modification is executed by Owner authorizing the identified deviation. The Design-Builder shall not be relieved of responsibility for errors or omissions in Submittals or any other errors or omissions in performance of the Work by the Owner's approval of the Submittals.

§ 3.1.11.5 All professional design services or certifications to be provided by the Design-Builder, including all drawings, calculations, specifications, certifications, shop drawings and other Submittals, shall contain the signature and seal of the licensed design professional preparing them. Submittals related to the Work designed or certified by the licensed design professionals, if prepared by others, shall bear the licensed design professional's written approval. The Owner and its consultants shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals.

§ 3.1.11.6 All color Samples required for the Work shall be received by the Owner no later than sixty (60) days of the date of the approval of the Design-Build Amendment. Once samples of all key items are received, the Owner will finalize color selections, and the Design-Builder shall prepare a color board of all selections and maintain at Project site.

§ 3.1.12 Warranty. The Design-Builder warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless the Design-Build Documents require or permit otherwise. The Design-Builder further warrants that the Work will conform to the requirements of the Design-Build Documents and will be free from defects, except for those inherent in the quality of the Work or otherwise expressly permitted by the Design-Build Documents. Work, materials, or equipment not conforming to these requirements may be considered defective. The Design-Builder's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Design-Builder, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage, but such exclusions shall only apply after Owner has taken occupancy of the damaged or defective portion of the Project. If required by the Owner, the Design-Builder shall furnish satisfactory evidence as to the kind and quality of materials and equipment. Design-Builder's express warranty herein shall be in addition to, and not in lieu of, any other remedies Owner may have under the Contract, at law or in equity, for defective Work. Notwithstanding anything in the Contract Documents to the contrary, Owner and Design-Builder expressly agree that the warranties stated herein shall mean the individual warranties associated with the entire Work , and warranty shall run from the applicable Work's Final Completion date (unless otherwise expressly provided in the applicable Contract Documents for that particular Work.) Design-Builder's warranties herein shall be interpreted to require Design-Builder to replace defective materials and equipment and re-execute defective Work which is disclosed to the Design-Builder by the Owner within a period of one (1) year after Final Completion of the entire Work or designated portion thereof or, if latent defect, within one (1) year after discovery thereof by Owner. Design-Builder's express warranty is in addition to, and not in lieu of, Owner's other available remedies. All required warranties on equipment, machinery, materials, or components shall be submitted to the Owner's Architect on the manufacturer's or supplier's approved forms for delivery to the Owner. The warranties set out in this Subparagraph are not exclusive of any other warranties or guarantees set out in other places in the Contract Documents or expressed or implied under applicable law.

3.1.12.1 Design-Builder shall certify that the Project has been constructed in general conformance with the plans, specifications, and Construction Documents, as modified from time to time pursuant to the terms of the Contract Documents. Design-Builder shall fully complete a "Certification of Project Completion" as required by 19 Texas Administrative Code § 61.1040.

3.1.12.2 In the event of failure of materials, products, or workmanship, either during construction or the warranty period, the Design-Builder shall take appropriate measures to ensure correction of defective Work or replacement of the defective items, without cost to the Owner. Such warranty shall be maintained notwithstanding that certain systems may be activated prior to Substantial Completion as required for the satisfactory completion of the Project. Upon written notice from the Owner or Owner's Architect, the Design-Builder shall promptly remedy defects as covered by Design-Builder's warranty. If Design-Builder does not respond to the written notice, either by beginning corrective work or notifying Owner in writing regarding when corrective work will begin, within ten (10) days of Design-Builder's receipt of the written notice, or sooner as described below, then the Owner may take measures to correct the Work and Design-Builder will be obligated to reimburse Owner's costs. The provisions of this subparagraph shall be in addition to, and not in lieu of, any other rights and remedies available to the Owner. The Owner will determine and assign the warranty priority as follows:

§ 3.1.12.2.1 Priority 1 - A complete shutdown situation. Owner is unable to operate. Safety or loss of building contents anticipated.. Unless shorter response durations exist in the Contract Documents, the Design-Builder shall provide warranty repair service within 8-hours' notice for warranty notice for the following:

1. Cooler and freezer equipment;
2. Chiller and pumps;
3. Boiler and pump;
4. Lift station;
5. Generator;
6. Elevator;
7. Roof leaks
8. Fire alarm and fire sprinkler malfunction

§ 3.1.12.2.2 Priority 2 - A major component of Owner ability to operate is affected. Some aspects of the operation can continue but issue is a major problem. Unless shorter response durations exist in the Contract Documents, the Design Builder shall provide warranty repair service within 24-hours' notice.

§ 3.1.12.2.3 Priority 3 – Owner operation is unaffected, but the issue is affecting efficient operation by one or more people. Unless shorter response durations exist in the Contract Documents, the Design Builder shall provide warranty repair service within 5-working days' notice.

§ 3.1.12.2.4 Priority 4 – The issue is an inconvenience or annoying but there are clear workarounds or alternates. Unless shorter response durations exist in the Contract Documents, the Design Builder shall provide warranty repair service within 10-working days' notice.

3.1.12.3 When deemed necessary by the Owner and prior to installation of any item specifically made subject to a performance standard or regulatory agency standard under any provision of the Contract Documents, Design-Builder shall furnish proof of conformance to the Owner's Architect. Proof of conformance shall be in the form of:

.1 an affidavit from the manufacturer certifying that the item is in conformance with the applicable standards; or

.2 an affidavit from a testing laboratory certifying that the product has been tested within the past year and is in conformance with the applicable standards; or

.3 such further reasonable proof as is required by the Owner and/or Owner's Architect.

3.1.12.4 The Design-Builder agrees to issue in the name of the Owner, or assign to the Owner at Final Completion of the Work, such assignment to be effective no later than Final Completion, any and all material, equipment, fixtures, and furniture (if supplied or installed by Design-Builder or its subcontractor), or other special warranties, and manufacturers' warranties relating to materials and labor used in the Work. Design-Builder further agrees to perform the Work in such manner so as to preserve any and all manufacturer's warranties. All forms will be required to be submitted prior to Final Payment.

3.1.12.5 The warranties of Design-Builder provided in this Article 3.1.12 shall in no way limit or abridge the warranties of the suppliers of equipment and systems which are to comprise a portion of the Work and all such warranties shall be in form and substance as required by the Contract Documents. Design-Builder shall take no action or fail to act in any way which results in the termination or expiration of such third party warranties or which otherwise results in prejudice to the rights of Owner under such warranties. Design-Builder agrees to provide all notices required for the effectiveness of such warranties and shall include provisions in the contracts with the providers and manufacturers of such systems and equipment whereby Owner shall have a direct right, but not a duty, of enforcement of such warranty obligations.

3.1.12.6 Design-Builder shall maintain a complete and accurate schedule of the date(s) of Substantial Completion, the date(s) of Final Completion, and the dates upon which the warranty on each phase or building will expire. Design-Builder shall provide a copy of such schedules to Owner and Owner's Architect. Prior to termination of the warranty period, Design-Builder shall accompany Owner and/or Owner's Architect on re-inspection of each Work in the Project and Design-Builder shall be responsible from correcting any warranty items which are observed or reported during the warranty period. Design-Builder shall prosecute such warranty work without interruption until accepted by Owner, even though such work shall extend beyond the warranty period. If Design-Builder fails to provide the schedules to Owner, Design-Builder's warranty obligation described herein shall continue until such inspection is conducted and deficiencies are corrected.

3.1.12.7 Prior to receipt of Final Payment, Design-Builder shall, except as permitted in writing by Owner:

.1 Obtain duplicate original warranties, executed by all subcontractors, making the dates of beginning of the warranties the Date of Final Completion; and the warranties of suppliers and manufacturers, making the dates of beginning of the warranties no later than the Date of Final Completion;

.2 Verify that the documents are in proper form and contain full information;

.3 Co-sign warranties when required;

.4 Bind all warranties in commercial quality 8-1/2 X 11 inch three-ring binder, with hardback, cleanable, plastic covers;

.5 Label the cover of each binder with a typed or printed title labeled "WARRANTIES", along with the title of the Project, name, address, and telephone number of Design-Builder, and name of its responsible principal;

.6 Include a Table of Contents, with each item identified by the number and title of the specification section under which the product is specified;

.7 Separate each warranty with index tab sheets keyed to the Table of Contents listing; and

.8 Deliver warranties and bonds in the form described above, to the Owner's Architect who will review same prior to submission to the Owner.

3.1.12.8 Neither the final payment nor any provision in the Design-Build Documents shall constitute an acceptance of Work not done in accordance with the Design-Build Documents or relieve the Design-Builder or its sureties of liability with respect to any warranties or responsibility for faulty materials and workmanship. The Design-Builder guarantees that the Work will conform to the Design-Build Documents.

3.1.12.9 The building(s) constructed, if any, shall be watertight and leak proof at every point and in every area, except where leaks can be attributed to damage to the building(s) by external forces beyond Design-Builder's control. The Design-Builder, immediately upon notification by the Owner of water penetration, shall determine the source of water penetration and do any work necessary to make the building(s) watertight. The Design-Builder also shall repair or replace any damaged material, finishes, and fixtures, damaged as a result of this water penetration, to return the building(s) to original condition.

§ 3.1.13 Royalties, Patents and Copyrights

§ 3.1.13.1 The Design-Builder shall pay all royalties and license fees.

§ 3.1.13.2 The Design-Builder shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and its separate contractors and consultants 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 Owner, or where the copyright violations are required in the Owner's Criteria, provided that Design Builder must notify Owner if Design-Builder has knowledge of such potential breach or in the exercise of reasonable care should have such knowledge. Failure to provide such notice shall waive any defense Design-Builder has against providing indemnity as contemplated herein. If the Design-Builder has reason to believe that the design, process or product required in the Owner's Criteria is an infringement of a copyright or a patent, the Design-Builder shall be responsible for such loss unless such information is promptly furnished to the Owner. If the Owner receives notice from a patent or copyright owner of an alleged violation of a patent or copyright, attributable to the Design-Builder, the Owner shall give prompt written notice to the Design-Builder.

§ 3.1.14 Indemnification

§ 3.1.14.1 TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, THE DESIGN-BUILDER SHALL AND DOES AGREE TO INDEMNIFY, PROTECT, DEFEND, RELEASE AND HOLD HARMLESS OWNER, AND ITS TRUSTEES, BOARD MEMBERS, OFFICERS, DIRECTORS, OFFICIALS, EMPLOYEES, CONSULTANTS, PROGRAM MANAGER, SUCCESSORS AND ASSIGNEES (COLLECTIVELY, "THE INDEMNIFIED PARTIES") OF, FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES, LIENS, CAUSES OF ACTION, SUITS, JUDGMENTS, PENALTIES, AND EXPENSES, INCLUDING REASONABLE ATTORNEY FEES AND COURT COSTS, TO THE EXTENT ARISING OUT OF, CAUSED BY, OR RESULTING FROM ANY NEGLIGENT, WRONGFUL, OR TORTIOUS ACT OR OMISSION OF THE DESIGN-BUILDER, DESIGN-BUILDER'S CONTRACTORS, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE THAT THEY CONTROL (COLLECTIVELY, "THE LIABILITIES"), REGARDLESS OF WHETHER OR NOT CAUSED IN PART BY THE NEGLIGENT ACTS OR OMISSIONS OF OWNER OR OWNER'S CONSULTANTS OR PROGRAM MANAGER, WHERE THAT NEGLIGENCE IS A CONCURRING CAUSE OF THE INJURY, DEATH, OR DAMAGE. HOWEVER, THE INDEMNITY PROVIDED FOR IN THIS SECTION SHALL HAVE NO APPLICATION TO ANY CLAIM, LOSS, DAMAGE, CAUSE OF ACTION, SUIT, OR LIABILITY WHERE THE INJURY, DEATH, OR DAMAGE RESULTS FROM THE SOLE NEGLIGENCE OF OWNER OR OWNER'S CONSULTANTS OR PROGRAM MANAGER, UNMIXED WITH THE FAULT OF ANY OTHER PERSON OR ENTITY; PROVIDED THAT WHERE THE NEGLIGENCE OF OWNER IS A CONCURRING CAUSE, DESIGN BUILDER'S OBLIGATION TO INDEMNIFY IS LIMITED TO THE AMOUNT NECESSARY TO CAUSE THE

RELATIVE LIABILITY OF OWNER AND DESIGN-BUILDER TO REFLECT THE COMPARATIVE NEGLIGENCE FINDINGS OF THE TRIER OF FACT (JUDGE OR JURY) OR AS AGREED IN A SETTLEMENT AGREEMENT TO WHICH OWNER AND DESIGN-BUILDER ARE ALL PARTIES. IN THE EVENT OF FAILURE BY THE DESIGN-BUILDER TO FULLY PERFORM IN ACCORDANCE WITH THIS INDEMNIFICATION SECTION, EACH OF THE INDEMNIFIED PARTIES, AT ITS OPTION, AND WITHOUT RELIEVING DESIGN-BUILDER OF ITS OBLIGATIONS HEREUNDER, MAY SO PERFORM, BUT ALL COSTS AND EXPENSES SO INCURRED BY ANY OF THE INDEMNIFIED PARTIES IN THAT EVENT SHALL BE REIMBURSED BY DESIGN BUILDER TO THE INDEMNIFIED PARTIES, AND ANY COST AND EXPENSES SO INCURRED BY INDEMNIFIED PARTIES, OR ANY OF THEM SHALL BEAR INTEREST UNTIL REIMBURSED BY DESIGN-BUILDER, AT THE RATE OF INTEREST PROVIDED TO BE PAID BY THE JUDGMENT UNDER THE LAWS OF THE STATE OF TEXAS. THIS INDEMNIFICATION SHALL NOT BE LIMITED TO DAMAGES, COMPENSATION, OR BENEFITS PAYABLE UNDER INSURANCE POLICIES, WORKERS' COMPENSATION ACTS, DISABILITY BENEFIT ACTS, OR OTHER EMPLOYEE BENEFIT ACTS.

DESIGN-BUILDER SHALL BE RESPONSIBLE FOR AND SHALL HOLD OWNER AND OWNER'S CONSULTANTS OR PROGRAM MANAGER FREE AND HARMLESS FROM LIABILITY RESULTING FROM LOSS OF OR DAMAGE TO DESIGN-BUILDER'S OR ITS CONTRACTORS' CONSTRUCTION TOOLS AND EQUIPMENT AND RENTED ITEMS WHICH ARE USED OR INTENDED FOR USE IN PERFORMING THE WORK, REGARDLESS OF WHETHER SUCH LOSS OR DAMAGE IS CAUSED IN WHOLE OR IN PART BY THE NEGLIGENCE OF OWNER OR OWNER'S CONSULANTS OR PROGRAM MANAGER. THIS PROVISION SHALL APPLY, WITHOUT LIMITATION, TO LOSS OR DAMAGE OCCURRING AT THE WORK SITE OR WHILE SUCH ITEMS ARE IN TRANSIT TO OR FROM THE WORK SITE AND IS IN ADDITION TO DESIGN-BUILDER'S OBLIGATIONS UNDER SECTION 3.1.14. IT IS THE EXPRESS INTENTION OF THE PARTIES HERETO, BOTH DESIGN-BUILDER AND OWNER, THAT THE INDEMNITY IS PROVIDED FOR IN THIS SECTION AS TO DESIGN-BUILDER'S OR ITS CONTRACTOR'S TOOLS AND EQUIPMENT AND RENTAL ITEMS, IS AN AGREEMENT BY DESIGN-BUILDER TO INDEMNIFY AND PROTECT OWNER FROM THE CONSEQUENCES OF OWNER'S OWN NEGLIGENCE, AND THAT OF OWNER'S CONSULTANTS OR PROGRAM MANAGER, WHETHER THAT NEGLIGENCE IS THE SOLE OR CONCURRING CAUSE OF THE LOSS OR DAMAGE, PROVIDED, HOWEVER, THAT WHERE THE NEGLIGENCE OF OWNER IS A CONCURRING CAUSE, DESIGN BUILDER'S OBLIGATION TO INDEMNIFY IS LIMITED TO THE AMOUNT NECESSARY TO CAUSE THE RELATIVE LIABILITY OF OWNER AND DESIGN-BUILDER TO REFLECT THE COMPARATIVE NEGLIGENCE FINDINGS OF TRIER OF FACT (JUDGE OR JURY) OR AS AGREED IN A SETTLEMENT AGREEMENT TO WHICH OWNER AND DESIGN-BUILDER ARE ALL PARTIES.

SUCH OBLIGATION SHALL NOT BE CONSTRUED TO NEGATE, ABRIDGE, OR REDUCE OTHER RIGHTS OR OBLIGATIONS OF INDEMNITY WHICH WOULD OTHERWISE EXIST AS TO A PARTY OR PERSON DESCRIBED IN THIS SECTION 3.1.14.

NOTHING HEREIN SHALL BE CONSTRUED AS REQUIRING DESIGN-BUILDER OR ANY ONE FOR WHOM OR FOR WHICH DESIGN-BUILDER IS LIABLE FOR FROM INDEMNIFYING, PROTECTING, DEFENDING, OR HOLDING THE INDEMNIFIED PARTIES HARMLESS FOR ANY CLAIM, DAMAGE, LOSS, CAUSE OF ACTION, SUIT, JUDGMENT, PENALTY, OR EXPENSE SOLELY ARISING OUT OF, CAUSED BY, OR RESULTING FROM THE NEGLIGENT, WRONGFUL, OR TORTIOUS ACT OR OMISSION OF OR BREACH OF THE CONTRACT BY AN INDEMNIFIED PARTY.

It is agreed with respect to any legal limitations now or hereafter in effect and affecting the validity or enforceability of the indemnification obligations under this Section 3.1.14, such legal limitations are made a part of the indemnification obligation and shall operate to amend the indemnification obligation to the minimum extent necessary to bring the provision into conformity with the requirements of such limitations, and as so modified, the indemnification obligations shall continue in full force and effect.

§ 3.1.14.2 The indemnification obligation under this Section 3.1.14 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for Design-Builder, Architect, a Consultant, a Contractor, or anyone directly or indirectly employed by them, under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 3.1.14.3 THE PROVISIONS OF THIS INDEMNIFICATION SHALL SURVIVE THE COMPLETION, TERMINATION OR EXPIRATION OF THIS CONTRACT.

§ 3.1.15 Contingent Assignment of Agreements

§ 3.1.15.1 Each agreement, if any, for a portion of the Work is assigned by the Design-Builder to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause, pursuant to Sections 13.1.4 or 13.2.2, and only for those agreements that the Owner accepts by written notification to the Design-Builder and the Architect, Consultants, and Contractors whose agreements are accepted for assignment; 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 an agreement, the Owner assumes the Design-Builder's rights and obligations under the agreement.

§ 3.1.15.2 Upon such assignment, if the Work has been suspended for more than 30 days, the compensation under the assigned agreement shall be equitably adjusted for increases in cost resulting from the suspension.

§ 3.1.15.3 Upon such assignment to the Owner under this Section 3.1.15, the Owner may further assign the agreement to a successor design-builder or other entity. If the Owner assigns the agreement to a successor design-builder or other entity, the Owner shall nevertheless remain legally responsible for all of the successor design-builder's or other entity's obligations under the agreement.

§ 3.1.16 Design-Builder's Insurance and Bonds. See Article 16.

ARTICLE 4 WORK PRIOR TO EXECUTION OF THE DESIGN-BUILD AMENDMENT

§ 4.1 General

§ 4.1.1 Any information submitted by the Design-Builder, and any interim decisions made by the Owner, shall be for the purpose of facilitating the design process and shall not modify the Owner's Criteria unless the Owner and Design-Builder execute a Modification.

§ 4.1.2 The Design-Builder shall advise the Owner on proposed site use and improvements, selection of materials, and building systems and equipment. The Design-Builder shall also provide the Owner with recommendations, consistent with the Owner's Criteria, on constructability; availability of materials and labor; time requirements for procurement, installation and construction; and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions.

§ 4.2 Evaluation of the Owner's Criteria

§ 4.2.1 The Design-Builder shall schedule and conduct meetings with the Owner and any other necessary individuals or entities to discuss and review the Owner's Criteria as set forth in Section 1.1. The Design-Builder shall thereafter again meet with the Owner to discuss a preliminary evaluation of the Owner's Criteria. The preliminary evaluation shall address possible alternative approaches to design and construction of the Project and include the Design-Builder's recommendations, if any, with regard to accelerated or fast-track scheduling, procurement, or phased construction. The preliminary evaluation shall consider cost information, constructability, and procurement and construction scheduling issues.

§ 4.2.1.1 Prior to development of the Design-Build Amendment, the Design Builder shall review investigate the site and any documents and information reasonably requested by the Design-Builder to the best of their ability to ascertain whether the components of the plumbing, electrical and mechanical systems may be constructed without interference with each other, or with the structural or architectural components of the Project, or with the existing systems. In the event that conflicts between the systems are discovered, the Design Builder shall promptly notify the Owner in writing.

§ 4.2.1.2 Notwithstanding any provision of this Agreement to the contrary, the Design Builder shall not be entitled to additional compensation for any delay or disruption to the Work arising from any conflict between the mechanical, electrical, and plumbing systems with each other, or with the structural or architectural components of the Project, or with existing systems, if such conflicts were known or discovered during the investigation described

in Article 4.2.1.1, or the Design Builder through the exercise of reasonable diligence should have discovered same, and the Owner was not informed of such conflicts.

§ 4.2.2 The Owner shall review the Design-Builder's written report and, if acceptable, provide the Design-Builder with written consent to proceed to the development of the Preliminary Design as described in Section 4.3. The recommendations and advice of the Design-Builder concerning design alternatives and potential cost savings shall be subject to the review and approval of the Owner's Architect, and the Owner. The consent to proceed shall not be understood to modify the Owner's Criteria unless the Owner and Design-Builder execute a Modification, and such consent shall not relieve the Design Builder of its duty of care and obligations to perform in accordance with the terms and conditions herein.

§ 4.3 Design-Builder's Proposal

§ 4.3.1 The Design-Builder shall prepare and submit the Design-Builder's Proposal to the Owner. The Design-Builder's Proposal shall include the following:

- **.1** A list of the Preliminary Design documents and other information, including the Design-Builder's clarifications, assumptions and deviations from the Owner's Criteria, upon which the Design-Builder's Proposal is based;
- **.2** The proposed Contract Sum, including the compensation method and, if based upon the Cost of the Work plus a fee, a written statement of estimated cost organized by trade categories, allowances, contingencies, Design-Builder's Fee, and other items that comprise the Contract Sum;
- **.3** The proposed date the Design-Builder shall achieve Substantial Completion;
- **.4** An enumeration of any qualifications and exclusions, if applicable;
- **.5** A list of the Design-Builder's key personnel, Contractors and suppliers; and
- **.6** The date on which the Design-Builder's Proposal expires.

4.3.2 In light of Owner's construction schedule, time is of the essence for Owner's receipt of a Design Builder's Proposal. Design Builder shall submit Design-Builder's Proposal no later than seven (7) calendar days from Owner's written notice and request for same. If a proposal acceptable to Owner is not agreed to by both Parties and entered by the eighth (8^{th}) calendar day from the Owner's written notice and request for Design-Builder's proposal, Owner shall have an absolute right in its sole discretion to terminate this Contract immediately upon written notice to Design Builder, in which case Owner shall have no further obligation to Design-Builder, including that Owner shall have no financial obligation to Design-Builder whatsoever.

§ 4.3.3 Submission of the Design-Builder's Proposal shall constitute a representation by the Design-Builder that it has visited the site, performed a diligent investigation and become familiar with local conditions under which the Work is to be completed. The Design Builder shall observe any conditions at the site affecting or that might affect the Project; evaluate the location and nature of the Work to be performed; review the geotechnical reports for the nature of the ground and subsoil, the form and nature of the site, and the subsurface conditions of the site if required for the Project; take field measurements of any existing conditions; familiarize itself with the local conditions under which the Project is to be constructed and the construction work is to performed; examine the location and character of existing or adjacent work or structures; and assess the general character and accessibility of the site. The Design-Builder shall, if applicable, review the appropriate AHERA and hazardous materials surveys for the particular site(s) involved in the Project, and shall notify all Subcontractors and Sub-subcontractors of the necessity to review said surveys. Design-Builder shall perform the Work in such a manner as to avoid damaging, exposing, or dislodging any asbestos-containing materials that are clearly identified and located in AHERA and other hazardous material surveys. If applicable, Design-Builder shall comply with U.S. Environmental Protection Agency rules concerning renovating, repairing or painting work in schools built prior to 1978 involving lead-based paint. These requirements apply irrespective of which party owns the Property, include if the Property is owned by a third party not part to this Agreement.

§ 4.3.4 If the Owner and Design-Builder agree on a proposal, the Owner and Design-Builder shall execute the Design-Build Amendment setting forth the terms of their agreement.

ARTICLE 5 WORK FOLLOWING EXECUTION OF THE DESIGN-BUILD AMENDMENT

§ 5.1 Preliminary Design, And Construction Documents

§ 5.1.1 Upon execution of the Design-Build Amendment, the Design-Builder shall prepare and submit a Preliminary Design to the Owner. The Preliminary Design shall include a report identifying any deviations from the Owner's Criteria, and shall include the following:

.1 Confirmation of the allocations of program functions;
.2 Site plan;
.3 Building plans, sections and elevations;
.4 Structural system;
.5 Selections of major building systems, including but not limited to mechanical, electrical and plumbing systems;
.6 Outline specifications or sufficient drawing notes describing construction materials; and
.7 Outline other specifications called for by the Owner's criteria as set forth in Exhibit A.

The Preliminary Design may include some combination of physical study models, perspective sketches, or digital modeling. Design Builder shall consult with Owner, and the parties shall reasonably determine whether such renderings are appropriate for the Project.

§ 5.1.2 The Owner shall review the Preliminary Design and, if acceptable, provide the Design-Builder with written consent to proceed to development of the Design-Builder's Construction Documents, and such consent shall not relieve the Design Builder of its duty of care and obligations to perform in accordance with the terms and conditions herein. The Preliminary Design shall not modify the Owner's Criteria unless the Owner and Design-Builder execute a Modification.

§ 5.1.3 Construction Documents

§ 5.1.3.1 After the Design-Builder meets with the Owner and presents the preliminary evaluation, and periodically during the preparation of the Construction Documents, the Design-Builder shall provide a written report to the Owner, summarizing the Design-Builder's evaluation of the Owner's Criteria. The report shall also include

.1 allocations of program functions, detailing each function and their square foot areas;
.2 a preliminary estimate of the Cost of the Work, and, if necessary, recommendations to adjust the Owner's Criteria to conform to the Owner's budget. Design Builder shall inform the Owner and recommend, if necessary, appropriate modifications of the Design Documents to modify the Design-Builder's independent estimates to amounts equal to or lower than the Total Project Cost. Design-Builder's cost estimates shall be separated into discrete phases as the Owner may require for completion of the Project and prepared to reflect the full and complete cost of the Project to facilitate the Owner's evaluation of the Total Project Cost. Design-Builder's cost estimates shall be provided according to standards as specified below. Design-Builder shall include all costs to construct the building including items such as, General Conditions, bonds, insurance, permit fees, wage rates, Design-Builder fees, escalation costs, and other costs. A description of the cost assumptions shall be furnished by the Design-Builder. Construction cost estimates shall be developed/updated and submitted as a part of each of the following submittals:

1. Schematic Design at 50% and 99%, Uniformat elemental categories and detailed to Level 2
2. Design Development at 50% and 99%; Masterformat detailed to Level 3;
3. Construction Documents; 50% milestone; Masterformat Level 3, specific to Project specification section; 90% milestone; Masterformat Level 3, specific to Project specification section
4. As Needed: Where Owner requests pricing for options such as alternates, phases, material options, and other items that may be required to give the Owner maximum flexibility in Design Document decision making and Guaranteed Maximum Price proposal approval.

Each cost estimate shall:

a. Reflect the best professional estimate of actual costs anticipated.
b. Establish internal estimating allowances, consistent with good professional practice, appropriate to the phase of development. Larger allowances are assumed held at early phases gradually diminishing to zero at completion of final cost estimate.

.3 a preliminary schedule, which shall include proposed design milestones; dates for receiving additional information from, or for work to be completed by, the Owner; anticipated date for the Design-Builder's Proposal; and dates of periodic design review sessions with the Owner; and

.4 the following:

«Other information to be included in the Design-Build Amendment as set forth in Article 1.1.»

§ 5.1.4 Upon the execution of the Design-Build Amendment, and upon written notice to proceed from the Owner following Preliminary Design, the Design-Builder shall prepare Construction Documents. The Construction Documents shall establish the quality levels of materials and systems required. The Construction Documents shall be consistent with the Design-Build Documents. The Design Builder's architect's signature and seal on the construction documents shall certify compliance with all applicable laws as described in this Agreement. The Design Builder shall perform a building code search under applicable regulations that may influence the Project, and shall certify that the design has been researched before it is final. Design Builder shall design the Project in such a manner that the Project or each part of the Project is readily accessible to and usable by individuals with disabilities, in compliance with the Americans with Disabilities Act, federal regulations interpreting the Americans With Disabilities Act and all requirements or standards of the Texas Department of Licensing and Regulation. The Design Builder shall, at appropriate times, contact the governmental authorities required to coordinate and/or approve the Construction Documents and the entities providing utility services to the Project. In designing the Project, the Design Builder shall respond to applicable design requirements imposed by such governmental authorities and by such entities providing utility services.

§ 5.1.5 The Design-Builder shall provide the Construction Documents to the Owner for the Owner's information and written approval. The Design-Builder stipulates and agrees that the Owner has no duty to discover any design errors or omissions in the Drawings, Plans, Specifications, and other Construction Documents, and has no duty to notify Design-Builder of same. By entering into the Contract Documents or any Agreement with any Architect, Owner does not warrant the adequacy and accuracy of any Drawings, Plans, Specifications, or other Construction Documents. The Construction Documents shall not modify the Design-Build Documents unless the Owner and Design-Builder execute a Modification. The failure of the Owner to discover any such deviations shall not relieve the Design-Builder of the obligation to perform the Work in accordance with the Design-Build Documents.

§ 5.2 Construction

§ 5.2.1 Commencement. Construction shall not commence prior to execution of the Design-Build Amendment. The date of the commencement of the Work shall be fixed in a notice to proceed. The Design-Builder may not commence construction, however, until all bonds and insurance required by the Contract have been received by the Owner.

§ 5.2.2 Intentionally deleted.

§ 5.2.3 The Design-Builder shall supervise and direct the Work in accordance with the terms of this Agreement. The Design-Builder 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 Design-Build Documents give other specific instructions concerning these matters. The Design-Builder shall properly and efficiently coordinate the timing, scheduling, and routing of all Work performed by all sub-contractors and sub-subcontractors.

§ 5.2.4 The Design-Builder shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work. The Design Builder shall confine operations at the site to areas permitted by law, ordinances and permits and shall not unreasonably encumber the site with materials or equipment. When the Work is to be performed at an existing location in which instructional classes and activities are conducted and ongoing, Design Builder shall schedule and perform the Work in a manner that does not compromise the safety to students, faculty, and staff, and does not unreasonably disrupt or interfere with the continuing normal routine of the school. If the Owner adds a reasonable school operations statement or instruction as a part of the Design-Build Documents, Design Builder will comply with its terms, at no increase in the Contract Sum. The Design Builder will abide by all applicable policies, rules, and regulations of the Owner with respect to conduct, including smoking, access to the Project Site, parking of vehicles, tree preservation, and entry to any adjacent facilities that are owned by the Owner.

§ 5.2.5 Design Builder shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the Site and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the Site shall be free from all debris, building

materials, and equipment likely to cause hazardous conditions. Without limitation of any other provision on the Design-Build Documents, Design Builder shall use its best efforts to minimize any interference with the occupancy or beneficial use of:

.1 any area and buildings adjacent to the Site of the Work, or
.2 the building in the event of partial occupancy.

§ 5.3 Labor and Materials

§ 5.3.1 These Contract Documents shall not be construed to deny or diminish the right of any person to work because of the person's membership or other relationship status with respect to any organization. Texas Government Code § 2269.054. These Contract Documents shall also not prohibit, require, discourage or encourage a person, or discriminate against a person bidding on this contract from entering into or declining to enter into, or adhering to, an agreement with a collective bargaining organization relating to this Project. Texas Government Code § 2269.0541. Unless otherwise provided in the Contract Documents, the Design-Builder shall provide and pay for qualified, careful, and efficient workers and labor, eligible to work in accordance with state and federal law. Design-Builder shall appropriately classify all workers in accordance with the Fair Labor Standards Act, its implementing regulations, and Texas Labor Code § 214.008. In addition, unless otherwise provided in the Contract Documents, the Design-Builder shall provide and pay for 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.

§ 5.3.2 When a material or system is specified in the Design-Build Documents, the Design-Builder may make substitutions only in accordance with Article 6.

§ 5.3.3 The Design-Builder shall enforce strict discipline and good order among the Design-Builder's employees and other persons carrying out the Work. The Design-Builder shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. Furthermore, upon Owner's instruction, Design-Builder may not use any employee, Design-Builder, supplier or vendor in the performance of the Work to whom the Owner makes a reasonable objection. THE DESIGN-BUILDER RELEASES, INDEMNIFIES AND HOLDS HARMLESS THE OWNER FOR DESIGN-BUILDER'S FORCES' NON-COMPLIANCE WITH OWNER'S DRUG-FREE, ALCOHOL-FREE, WEAPON-FREE, HARASSMENT-FREE, AND TOBACCO-FREE ZONES, DESIGN-BUILDER'S FORCES' NON-COMPLIANCE WITH CRIMINAL LAW, OR DESIGN-BUILDER'S OR DESIGN-BUILDER'S FORCES' NON-COMPLIANCE WITH IMMIGRATION LAW OR REGULATIONS. Any individual found by Owner to have violated these restrictions is subject to permanent removal from the Project, at the Owner's request. Design-Builder shall place similar language in its subcontract agreements, requiring the Subcontractors and Sub-subcontractors to be responsible for their own forces, and Design-Builder shall cooperate with the Owner to ensure Subcontractor and Sub-subcontractor compliance.

5.3.3.1 Including, but not limited to, any specific requirements of this Agreement, Design-Builder, its subcontractors and vendors shall bear responsibility for compliance with all federal, state, and local laws, regulations, guidelines, and ordinances pertaining to work safety and applicable to the Work. Design-Builder further recognizes that the Owner does not owe the Design-Builder any duty to supervise or direct his work so as to protect the Design-Builder from the consequences of his own conduct.

§ 5.3.4 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project Site by the Design Builder. After equipment is no longer required for the Work, it shall be promptly removed from the Project Site. Reasonable protection of construction material and equipment stored at the Project Site from weather, theft, damage and all other adversity is solely the responsibility of the Design Builder.

§ 5.4 Taxes

The Design-Builder shall pay sales, consumer, use and similar taxes, for the Work provided by the Design-Builder, that are legally enacted when the Design-Build Amendment is executed, whether or not yet effective or merely scheduled to go into effect. The Design Builder recognizes that Owner is a governmental, tax-free entity and shall work with Owner to obtain appropriate tax exemption certificate(s) or other similar evidence and ensure that no taxes are improperly assessed.

§ 5.5 Permits, Fees, Notices and Compliance with Laws

§ 5.5.1 Unless otherwise provided in the Design-Build Documents, the following shall be considered within the Design-Builder's control, and therefore, the Design-Builder waives rights to claims. The Design-Builder shall secure and pay for the building permit as well as any other permits, fees, licenses, and inspections by government agencies, necessary for proper execution of the Work and Substantial Completion of the Project. The Contractor shall be responsible for timely notification to and coordination with all utility companies regarding the provision of services to the Project. Connections for temporary and permanent utilities, utility district/company inspections, tap charges, water meter charges, and any other similar fees assessed by jurisdictional authorities having control over the Project, as well as payment for temporary utilities services required for the Work, whether the Work is new construction or renovation of an existing facility, are the direct responsibility of the Contractor, without reimbursement from Owner, unless otherwise agreed in writing. If the Work is new construction, then payment for temporary and permanent utility services shall be the direct responsibility of the Contractor, without reimbursement from Owner, until Substantial Completion.

§ 5.5.2 The Design-Builder 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. Unless otherwise provided in the Design-Build Documents, the Design-Builder shall procure and obtain all bonds, other than long-term maintenance bonds, required of the Owner or the Design-Builder by the municipality in which the Project is located or by any other public or private body with jurisdiction over the Project. In connection with such bonds, the Design-Builder shall prepare all applications, supply all necessary back-up material and furnish the surety with any required personal undertakings. Unless otherwise provided in the Design-Build Documents, the Design-Builder shall also obtain and pay all charges for all approvals for street closings, traffic control, parking meter removal, and other similar matters as may be necessary or appropriate for the performance of the Work.

§ 5.5.2.1 If the Design-Builder observes that portions of the Design-Build Documents are at variance with applicable laws, statutes, ordinances, building codes, rules, and/or regulations, the Design-Builder shall promptly notify the Owner in writing, and necessary changes may be accomplished by appropriate Modification upon Owner's written request. However, if such variances are due to a change in the law, statutes, ordinances, building codes, rules, and/or regulations after execution of the Agreement, then Design-Builder may seek an increase to the Contract Sum for actual costs incurred and/or Contract Time for actual time lost as provided under the Contract that are directly attributable to changes required as provided in this Section 5.5.2.1.

§ 5.5.3 Concealed or Unknown Conditions. If the Design-Builder encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Design-Build 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 Design-Build Documents or should have encountered such conditions in the exercise of reasonable diligence, the Design-Builder shall promptly provide notice to the Owner before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Owner shall promptly investigate such conditions and, if the Owner determines that they differ materially and cause an increase or decrease in the Design-Builder's cost of, or time required for, performance of any part of the Work, shall recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Owner determines that the conditions at the site are not materially different from those indicated in the Design-Build Documents and that no change in the terms of the Contract is justified, the Owner shall promptly notify the Design-Builder in writing, stating the reasons. If the Design-Builder disputes the Owner's determination or recommendation, the Design-Builder may proceed as provided in Article 14.

§ 5.5.4 If, in the course of the Work, the Design-Builder encounters or in the exercise of reasonable diligence should discover human remains, or the existence of burial markers, archaeological sites, or wetlands, not indicated in the Design-Build Documents, the Design-Builder shall immediately suspend any operations that would affect them and shall notify the Owner. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Design-Builder 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 14.

§ 5.5.5 The Design-Builder shall be responsible for timely notification to and coordination with all utility companies regarding the provision of or revising of services to the Project. The Design-Builder shall inform the Owner at once

when the Owner's participation is required. Connections for temporary utilities required for the Work are the responsibility of the Design-Builder. Unless otherwise provided in the Design-Build Documents, payment for temporary services, tap charges, and water meter charges shall be the responsibility of the Design-Builder. Payment for permanent utility services shall be the responsibility of the Owner. The Design-Builder shall also obtain all permits and approvals, and pay all fees and expenses, if any, associated with Storm Water Pollution Prevention and Pollution Control Plan (SWPPP) regulations administered by the Texas Commission on Environmental Quality (TCEQ) and local authorities, as well as the National Pollutant Discharge Elimination System (NPDES). All of the foregoing expenses paid by the Design-Builder shall be considered Costs of the Work.

5.5.6 Prior to performing any Work, if applicable, Design-Builder shall locate all utility lines as shown and located on the plans and specifications, including the telephone company lines and cables, sewer lines, water pipes, gas lines, electrical lines, including, but not limited to, all buried pipelines and buried telephone cables, and shall perform any Work in such a manner so as to avoid damaging any such lines, cables, pipes, and pipelines. In addition, Design-Builder shall independently determine the location of same. Design-Builder shall be responsible for any damage done to such utility lines, cables, pipes, and pipelines during its Work, and shall be responsible for any loss, damage, or extra expense resulting from such damage. Repairs shall be made immediately to restore all service. Any delay for such break shall be attributable to Design-Builder. In addition, if applicable, Design-Builder shall review the appropriate AHERA and hazardous materials surveys for the particular campuses involved in the Project, and shall notify all Subcontractors and Sub-subcontractors of the necessity to review said surveys. Design-Builder shall perform any Work in such a manner as to avoid damaging, exposing, or dislodging any asbestos-containing materials that are clearly identified and located in AHERA and other hazardous material surveys. Before performing any portion of the Work, the Design-Builder shall fully investigate all physical aspects of the Project Site and verify all dimensions, measurements, property lines, grades and elevations, existing improvements, and general suitability of existing conditions at the Project site. If applicable, Design-Builder shall comply with U.S. Environmental Protection Agency rules concerning renovating, repairing, or painting work in schools built prior to 1978 involving lead-based paint.

§ 5.6 Allowances

§ 5.6.1 The Design-Builder shall include in the Contract Sum, and not as an additional amount, all allowances stated in the Design-Build Documents. Items covered by allowances shall be supplied for such amounts, and by such persons or entities as the Owner may direct, but the Design-Builder shall not be required to employ persons or entities to whom the Design-Builder has reasonable objection. The inclusion of any Allowance or Contingency is solely for the benefit of the Owner. Expenditure of any Allowance or Contingency may only be made with prior written approval of the Owner and according to the procedures of Article 6. Owner's authorized representative may approve any expenditure from Allowances without further Board approval. If the Allowances or Contingency are not expended or not fully expended, then any unused portion shall belong to the Owner and shall be credited to the Owner in calculating Final Payment. Allowances shall be considered Cost of the Work and do not include Design-Builder's cost for Fee and General Conditions until spent.

§ 5.6.2 Calculation of costs or credits for Allowances shall be as described in article 6.1.4.

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

§ 5.6.4 When performing Work under Allowances, Contractor shall solicit and receive not less than three written proposals, unless the requirement to obtain proposals is waived by the Owner in advance, and shall provide the Work as directed by the Architect, upon Owner's written approval, on the basis of the best value to the Owner.

§ 5.7 Key Personnel, Contractors and Suppliers

§ 5.7.1 The Design-Builder shall not employ personnel, or contract with Contractors or suppliers to whom the Owner has made reasonable and timely objection. The Design-Builder shall not be required to contract with anyone to whom the Design-Builder has made reasonable and timely objection.

§ 5.7.2 If the Design-Builder changes any of the personnel, Contractors or suppliers identified in the Design-Build Amendment, the Design-Builder shall notify the Owner and provide the name and qualifications of the new personnel, Contractor or supplier. The Owner may reply within 14 days to the Design-Builder in writing, stating (1) whether the Owner has reasonable objection to the proposed personnel, Contractor or supplier or (2) that the

Owner requires additional time to review. Failure of the Owner to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.7.3 Except for those persons or entities already identified or required in the Design-Build Amendment, the Design-Builder, as soon as practicable after execution of the Design-Build Amendment, shall furnish in writing to the Owner 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 Owner may reply within 14 days, or if such time period is not reasonably practical, then in such period of time that is practical, to the Design-Builder in writing stating (1) whether the Owner has reasonable objection to any such proposed person or entity or (2) that the Owner requires additional time for review. Failure of the Owner to reply within the 14-day period shall constitute notice of no reasonable objection, or of such time period is not reasonably practical, then in such period of time that is practical upon presentation of information regarding why 14 days was not enough time.

§ 5.7.3.1 If the Owner has reasonable objection to a person or entity proposed by the Design-Builder, the Design-Builder shall propose another to whom the Owner has no reasonable objection. If the rejected person or entity 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 person or entity's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Design-Builder has acted promptly and responsively in submitting names as required.

5.7.3.2 Each Contractor or Subcontractor shall be required to completely familiarize itself with the plans and specifications, to visit the Work site to completely familiarize itself with existing conditions, and to conduct any other appropriate investigations, inspections, or inquiries prior to submission of a bid or proposal. No increases in Contract Sums shall be allowed for failure to so inspect or investigate.

5.7.3.3 Subcontractual Relations

By appropriate written agreement, the Design-Builder shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Design-Builder by terms of the Contract Documents, and to assume toward the Design-Builder all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Design-Builder, by these Contract Documents, assumes toward the Owner. The terms and conditions of the Contract Documents shall be incorporated by reference into each subcontract agreement, included as provided below. Each subcontract agreement shall preserve and protect the rights of the Owner 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 Design-Builder that the Design-Builder, by the Contract Documents, has against the Owner. Where appropriate, the Design-Builder shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Design-Builder 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. Each subcontractor shall provide proof of insurance to Design-Builder consistent with the Design-Builder's insurance to Owner and in an amount commensurate with the Work to be performed by the Subcontractor.

5.7.3.4 The Owner shall be obligated to pay or to ensure the payment of any monies to subcontractors due to any non-payment to the Design-Builder or non-payment of subcontractors by the Design-Builder.

5.7.3.5 The Design-Builder shall require any potential subcontractor to disclose to the Design-Builder any ownership interest or familial relationship between the Design-Builder or the Owner, and the potential subcontractor prior to entering into a subcontract. Design-Builder shall report to Owner all such disclosures and the Owner shall have the right, in its sole discretion, to reject any such affiliated subcontractor.

5.7.3.6 Each subcontract agreement for any unperformed portion of the Work is assigned by the Design-Builder to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause or abandonment of the Project by the Design-Builder; and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Design-Builder in writing; and

.2 assignment is subject to the prior rights and obligations of the surety, if any, obligated under bond relating to the Contract; and

.3 The Subcontractor provides bonds as required by law of prime contractors and by Owner.

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

5.7.3.7 Such assignment shall not constitute a waiver by Owner of its rights against Design-Builder, including, but not limited to, claims for defaults, delays or defects for which a subcontractor or material vendor may also be liable.

5.7.3.8 Upon assignment to the Owner under this Section 5.7, the Owner may further assign the subcontract to a successor contractor or other entity. Owner shall only be responsible for compensating subcontractors for Work performed or materials furnished from and after the date on which the Owner gives written notice of its acceptance of the subcontract agreement. Owner shall not be responsible for any Work performed or materials furnished by subcontractors prior to the date of Owner's written notice of acceptance.

5.7.3.9 Design-Builder shall promptly notify Owner of any material defaults by any Subcontractor or Sub-subcontractor. Notwithstanding any provision contained in herein to the contrary, it is hereby acknowledged and agreed that Owner has in no way agreed, expressly or implicitly, nor will Owner agree, to allow any Subcontractor, Sub-subcontractor or other materialman or worker employed by Design-Builder the right to obtain a personal judgment or to create a mechanic's or materialman's lien against Owner for the amount due from the Owner or the Design-Builder.

§ 5.8 Documents and Submittals at the Site

The Design-Builder shall maintain at the site for the Owner one copy of the Design-Build Documents and a current set of the Construction Documents, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Submittals. The Design-Builder shall deliver these items to the Owner in accordance with Section 9.10.2 as a record of the Work as constructed.

§ 5.9 Use of Site

The Design-Builder shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Design-Build Documents, and shall not unreasonably encumber the site with materials or equipment. The Design-Builder shall so conduct its operations as not to unreasonably interfere with traffic on public thoroughfares adjacent to or near to the Project site.

§ 5.9.1 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project Site by the Design-Builder. After equipment is no longer required for the Work, it shall be promptly removed from the Project Site. Reasonable protection of construction material and equipment stored at the Project Site from weather, theft, damage and all other adversity is solely the responsibility of the Design-Builder.

§ 5.9.2 Except as may be set forth herein, the Design-Builder and any entity for whom the Design-Builder is responsible shall not erect any sign on the Project Site without the prior written consent of the Owner.

§ 5.9.3 Design-Builder shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the Site and all adjacent areas. The Work shall be performed, to the fullest extent reasonably possible, in such a manner that public areas adjacent to the Site shall be free from all debris, building materials, and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Design-Build Documents, Design-Builder shall use its best efforts to minimize any interference with the occupancy or beneficial use of:

.1 any area and buildings adjacent to the Site of the Work, or

.2 the building in the event of partial occupancy.

§ 5.9.4 Without prior approval of the Owner, the Design-Builder shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrance, and parking areas other than

those designated by the Owner. Without limitation of any other provision of the Design-Build Documents, the Design-Builder shall use its best efforts to comply with all rules, regulations promulgated by the Owner in connection with the use and occupancy of the Project Site and the building, policies, and procedures, as amended from time to time.

§ 5.10 Cutting and Patching

The Design-Builder shall not cut, patch or otherwise alter fully or partially completed 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 Design-Builder shall not unreasonably withhold from the Owner or a separate contractor the Design-Builder's consent to cutting or otherwise altering the Work.

§ 5.11 Cleaning Up

§ 5.11.1 The Design-Builder shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. Immediately after unpacking materials, all packing case lumber or other packing materials, wrapping or other like flammable waste shall be collected and removed from the building and premises. At completion of the Work, the Design-Builder shall remove waste materials, rubbish, the Design-Builder's tools, construction equipment, machinery and surplus materials from and about the Project. Care shall be taken by all workers not to mark, soil, or otherwise deface any finish. In the event that any finish becomes defaced in any way by mechanics or workers, the Design-Builder or any of his Contractors shall clean and restore such surfaces to their original condition. The Design-Builder shall be responsible for the protection of the Work, including damaged or broken glass caused by the construction operations. Prior to Final Completion, in addition to any additional final cleaning work specified in the Contract Documents (including the Specifications), Contractor shall: (1) employ skilled workers for final cleaning; (2) remove grease, mastic adhesive, dust, dirt, stains, fingerprints, labels and other foreign materials from all sight-exposed interior and exterior surfaces; (3) wash and shine glazing and mirrors; (4) polish glossy surfaces to a clear shine; (5) vacuum clean carpeted and similar soft surfaces; (6) clean (damp mop with clean mop and water) resilient and hard surface floors repeating as necessary until no visible residue remains on floors; (7) clean plumbing fixtures to a sanitary condition; (8) clean surfaces of all equipment and remove excess lubrication; (9) clean permanent filters and replace disposable filters in ventilating systems if units were operated during construction and clean ducts, blowers and coils; (10) clean light fixtures; (11) remove waste, foreign matter and debris from roofs, gutters, area ways and drainage ways; (12) remove waste, debris and surplus materials from the site; (13) remove stains, spills and foreign substances from paved areas; and (14) broom clean exterior concrete and paved surfaces and rake clean the grounds.

§ 5.11.2 If the Design-Builder fails to clean up as provided in the Design-Build Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Design-Builder.

§ 5.11.3 Prior to the Owner's inspection for Substantial Completion, the Design-Builder shall repair or replace damaged Work; clean exterior and interior surfaces exposed to view; remove temporary labels, stains, putty, soil, paint, and foreign substances from all surfaces; including glass and painted surfaces; polish transparent and glossy surfaces; clean equipment and fixtures to a sanitary condition; replace air filters in mechanical equipment; clean roofs, gutters, and downspouts; remove obstructions and flush debris from drainage systems; clean Site; sweep paved areas and rake clean other surfaces; remove trash and surplus materials from the Site; clean and polish all floors; clean and polish all hardware; and repair all Work damaged during cleaning.

§ 5.12 Access to Work; Progress of Work; Testing

The Design-Builder shall provide the Owner and its separate contractors and consultants access to the Work in preparation and progress wherever located. The Design-Builder shall notify the Owner regarding Project safety criteria and programs, which the Owner, and its contractors and consultants, shall comply with while at the site. The Owner and/or Owner's Architect and representatives shall be permitted to visit the site and have full access to the Work at any time and at any other intervals appropriate to the stage of construction, including, without limitation, to inspect the progress, quantity and quality of the Work completed, to reject any observed nonconforming Work, and to determine if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Construction Documents and the Contract Documents and on time. Furthermore, a minimum of two job site meetings per month from commencement of construction through Final Completion will be initiated by the Design-Builder. Attendees will include Owner, the Design Builder's project manager and/or superintendent and Owner's Architect. Owner's Architect, or its structural consultant may provide on-site observation prior to and during all concrete pours that contribute to the structural integrity of the building, including all pours of concrete piers, footings, grade beams, floor slabs, and concrete superstructure components, if applicable. In addition, Owner's

Architect or its structural consultant may provide on-site observation prior to covering up or closing up of portions of the construction, which if covered, would conceal problems with the structural integrity of the Project. Design-Builder shall not close or cover said Work until said observations, if requested by Owner, have occurred. Owner's Architect may advise Owner of the need for any third party laboratory or testing services to assist the Owner's Architect and Owner. Design-Builder shall keep Owner informed of the progress and the quality of the Work, through Design-Builder's field reports, and shall guard Owner against defects and deficiencies in the Work. Design-Builder shall promptly notify Owner, orally, regarding any defect or nonconforming Work, which shall be followed by notice in writing of defects or nonconforming Work noted and corrective action taken or recommended. Any services by Design-Builder made necessary by Design-Builder's construction defect or nonconforming Work, shall be performed at no additional cost to Owner. The Design-Builder shall reimburse the Owner for compensation paid to the Owner's Architect for additional site visits or other services made necessary by the fault, neglect, or request of the Design-Builder.

5.12.1 Testing or inspection under this Agreement shall be conducted subject to the requirements of Chapter 2269 of the Texas Government Code.

§ 5.13 Construction by Owner or by Separate Contractors

§ 5.13.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 5.13.1.1 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 terms and conditions identical or substantially similar to this Contract, including those terms and conditions related to insurance and waiver of subrogation. The Owner shall notify the Design-Builder promptly after execution of any separate contract. If the Design-Builder claims that delay or additional cost is involved because of such action by the Owner, the Design-Builder shall make a Claim as provided in Article 14.

§ 5.13.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Design-Builder" in the Design-Build Documents in each case shall mean the individual or entity that executes each separate agreement with the Owner.

§ 5.13.1.3 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 Design-Builder, who shall cooperate with them. The Design-Builder shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Design-Builder 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 Design-Builder, separate contractors and the Owner until subsequently revised.

§ 5.13.1.4 Unless otherwise provided in the Design-Build Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or separate contractors, the Owner shall be deemed to be subject to the same obligations to the extent reasonable and practical in light of Owner's status, and to have the same rights, that apply to the Design-Builder under the Contract.

§ 5.14 Mutual Responsibility

§ 5.14.1 The Design-Builder 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 Design-Builder's construction and operations with theirs as required by the Design-Build Documents.

§ 5.14.2 If part of the Design-Builder's Work depends upon construction or operations by the Owner or a separate contractor, the Design-Builder shall, prior to proceeding with that portion of the Work, prepare a written report to the Owner, identifying apparent discrepancies or defects in the construction or operations by the Owner or separate contractor that would render it unsuitable for proper execution and results of the Design-Builder's Work. Failure of the Design-Builder 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 Design-Builder's Work, except as to defects not then reasonably discoverable.

§ 5.14.3 The Design-Builder shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Design-Builder's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Design-Builder for costs the Design-Builder incurs because of a separate contractor's damage to the Work or defective construction, provided the Design Builder has provided prompt written notice to

Owner upon the occurrence of any such event or omission that caused or is likely to cause such delays or damage or upon such time as Design Builder, in the exercise of reasonable care, should have discovered same.

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

§ 5.14.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching the Work as the Design-Builder has with respect to the construction of the Owner or separate contractors in Section 5.10.

§ 5.15 Owner's Right to Clean Up

If a dispute arises among the Design-Builder, 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 will allocate the cost among those responsible.

ARTICLE 6 CHANGES IN THE WORK

§ 6.1 General

§ 6.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order or Change Directive, subject to the limitations stated in this Article 6 and elsewhere in the Design-Build Documents. The Contract Sum, and/or Contract Time may be increased for changes in the Work only if the provisions and requirements of Section 6 of this Agreement are met. A properly prepared written request for a change in the Work by Design-Builder shall be accompanied by sufficient supporting data and information to permit the Owner to respond. Design-Builder shall not make any claim for an adjustment to time or the Contract Sum due to: a change in the materials used; a change in the specified manner of constructing and/or installing the Work; or additional labor, services, or materials beyond that actually required by the terms of the Construction Documents or the Contract Documents, unless made pursuant to a written order or directive from Owner authorizing Design-Builder to proceed with a change in the Work. No claim for an adjustment to time or the Contract Sum shall be valid unless so ordered or directed.

§ 6.1.2 A Change Order shall be based upon agreement between the Owner and Design-Builder. The Owner may issue a Change Directive without agreement by the Design-Builder.

§ 6.1.3 Changes in the Work shall be performed under applicable provisions of the Design-Build Documents, and the Design-Builder shall proceed promptly, unless otherwise provided in the Change Order or Change Directive.

§ 6.1.4 Calculation of costs or credits for Changes, minor changes, Proposals, Contingency expenditures and Allowance expenditures:

1. Cost of the Work (as defined in Article A5 of the Design-Build Amendment) shall be used as the basis for increasing or decreasing the amounts due to the Contractor for Fee and General Conditions (at the rates stipulated in Article A.1.4.2 of the Design-Build Amendment) when compensating for construction phase services. Once a Change, minor change, Contingency expenditure or Allowance expenditure is approved by the Owner, the Cost of the Work is thereby adjusted and the amounts due to the Design-Builder for Fee and General Conditions are to be adjusted at the rates stipulated in Article A.1.4.2 of the Design-Build Amendment of the Contract. The Design-Builder Fee and General Conditions are not to be included within the Cost of the Work calculation. The Contractor is not entitled to additional Fee and General Conditions for self-performed Work. Notwithstanding any provision in the Contract Documents to the contrary, the Design-Builder's overhead and profit attributable to increases in the Cost of the Work, as evidenced by executed Change Order(s) identifying the same, shall not exceed the percentage of the Design-Builder Fee, and no markup shall be allowed on self-performed work.
2. When calculating the Cost of the Work for Changes, minor changes, Proposals, Contingency expenditures and Allowances, the Design-Builder shall furnish and include substantiation to satisfaction of the Owner of the following from Contractors:

Description of Contractor Cost of the Work Element

A Bare Material Costs

B Labor Hours

C Direct Labor Costs (See Article 1 Definitions)

D Labor Cost Burden (See Article 1 Definitions)

E Equipment

F Work performed by Subcontractor (if any), where Subcontractor Overhead and Profit shall not exceed 10%

G Contractor's Overhead and Profit, attributable to increases in the cost of its portion of the Work, as evidenced by executed Change Order(s) identifying the same, shall not exceed the rate of mark-up for Contractor's base scope of Work (and under no circumstances shall exceed 10% of A through F)

H Cost of the Work (Sum of A through G)

3. When Design-Builder self performs work, when calculating the Cost of the Work for Changes, minor changes, Proposals, Contingency expenditures and Allowances, the Design-Builder shall furnish and include substantiation to satisfaction of the Owner of the following:
Description of Design-Builder Cost of the Work Element

A Bare Material Costs

B Labor Hours

C Direct Labor Costs (See Article 1 Definitions)

D Labor Cost Burden (See Article 1 Definitions)

E Equipment

F Cost of the Work (Sum of A through E)

No additional Fee or General Conditions cost shall apply to self-performed Work.

4. By Unit Prices stated in the Contract Documents or subsequently agreed upon. Additional mark-ups for overhead and profit will not be allowed in Unit Price Work.

§ 6.1.4.1 The Design-Builder , upon receipt of written notification by the Owner or the Owner's Architect of a proposed item of change in the Work, shall prepare within 10 Calendar Days a Change Proposal in such form or forms as directed by the Owner or the Owner's Architect.

1. Each separate Change Proposal shall be numbered consecutively and shall include all cost related to the proposed Change in the Work, including any disruption or impact on performance.
2. The Contractor's and Subcontractor's itemized accounting shall be included with the Change Proposal;
3. If a Change Proposal is returned to the Design-Builder for additional information or if the scope of the proposed Change in the Work is modified by additions, deletions or other revisions, the Design-Builder shall revise the Change Proposal accordingly and resubmit the revised Change Proposal to the Owner's Architect and the Owner;
4. A revised Change Proposal shall be the original Change Proposal number suffixed by the letter "R" to designate a revision in the original Change Proposal. If additional revisions to a revised Change Proposal are necessary, each subsequent revision shall be identified by an appropriate numeral suffix immediately following the "R" suffix;
5. Upon written approval of a Change Proposal by Owner, the Owner's Architect and the Contractor, the Owner's Architect will prepare an Allowance Expenditure Authorization or Change Order authorizing such change in the Work; and
6. The Design-Builder shall request extensions of Contract Time due to changes in the Work only at the time of submitting its Change Proposal. Design-Builder's failure to do so shall represent a waiver of any right to request a Contract Time extension. Any request for extensions of Contract Time must be substantiated through the demonstration of the impact of the proposed item of change in the Work to the critical path schedule for the Project.

6.1.5 If the Contract Sum is $1,000,000.00 or more, or if the Contract Sum is less than $1,000,000.00, and any Change Order, Construction Change Directives, or other Changes in the Work would increase the Contract Sum to $1,000,000.00 or more, the total of all Change Orders, Construction Change Directives, or other Changes in the Work, may not increase the Contract Sum by more than 25% of the original Contract Sum. Any Change Order, Construction Change Directive, or other Change in the Work that would exceed that limit is void and of no effect. Texas Education Code § 44.0411.

§ 6.2 Change Orders

A Change Order is a written instrument signed by the Owner and Design-Builder 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 or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation; and

.3 The extent of the adjustment, if any, in the Contract Time.

Change Orders of $50,000.00 or more must be approved by Owner's Board of Trustees, unless otherwise delegated.

6.2.1 Acceptance of a Change Order by the Design-Builder shall constitute full accord and satisfaction for any and all claims, whether direct or indirect, including but not limited to impact, delay or acceleration damages, arising from the subject matter of the Change Order.

6.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 6.3.3. The Design-Builder shall not be entitled to include overhead and profit in any Change Order, except to the extent the Change Order results from an Owner-requested change in scope.

§ 6.3 Change Directives

§ 6.3.1 A Change Directive is a written order signed by the Owner directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation, or Contract Time. The Owner may by 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 or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation, and Contract Time being adjusted accordingly.

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

§ 6.3.3 If the Change Directive provides for an adjustment to the Contract Sum or, if prior to execution of the Design-Build Amendment, an adjustment in the Design-Builder's compensation, 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 Design-Build 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 6.3.7.

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

§ 6.3.5 Upon receipt of a Change Directive, the Design-Builder shall promptly proceed with the change in the Work involved and advise the Owner of the Design-Builder's agreement or disagreement with the method, if any, provided in the Change Directive for determining the proposed adjustment in the Contract Sum or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation, or Contract Time.

§ 6.3.6 A Change Directive signed by the Design-Builder indicates the Design-Builder's agreement therewith, including adjustment in Contract Sum or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation, and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 6.3.7 If the Design-Builder does not respond promptly or disagrees with the method for adjustment in the Contract Sum or, if prior to execution of the Design-Build Amendment, the method for adjustment in the Design-Builder's compensation, the Owner shall determine the method and the adjustment on the basis of the amount by which the Design-Builder's direct costs have actually been increased over the direct cost of performing the Work, without the Change in the Work. Direct costs shall be limited to the following:

.1 Direct labor costs;
.2 Actual costs of materials, supplies, and equipment, including cost of transportation, used in performing the Change in the Work;
.3 Actual rental costs of machinery and equipment rented from third parties, exclusive of hand tools,;
.4 Actual costs of premiums for all bonds and insurance, and permit fees, directly related to the change.

The Design-Builder shall keep and present, in such from as the Owner may prescribe, and itemized accounting of the items listed above, together with appropriate supporting documentation.

§ 6.3.8 The amount of credit to be allowed by the Design-Builder to the Owner for a deletion or change that results in a net decrease in the Contract Sum or, if prior to execution of the Design-Build Amendment, in the Design-Builder's compensation, shall be actual net cost. 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.

§ 6.3.9 Pending final determination of the total cost of a Change Directive to the Owner, the Design-Builder may request payment for Work completed under the Change Directive in Applications for Payment. The Owner will make an interim determination for purposes of certification for payment for those costs deemed to be reasonably justified. The Owner's interim determination of cost shall adjust the Contract Sum or, if prior to execution of the Design-Build Amendment, the Design-Builder's compensation, on the same basis as a Change Order, subject to the right of Design-Builder to disagree and assert a Claim in accordance with Article 14.

§ 6.3.10 When the Owner and Design-Builder agree with a determination concerning the adjustments in the Contract Sum or, if prior to execution of the Design-Build Amendment, the adjustment in the Design-Builder's compensation and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Owner and Design-Builder shall execute a Change Order. Change Orders may be issued for all or any part of a Change Directive.

§ 6.4 Substitutions

§ 6.4.1 The Design-Builder may make substitutions only with the prior written consent of the Owner, after evaluation by the Owner's Architect and in accordance with a Change Order or Construction Change Directive. Any such substitution request shall be made to the Owner's Architect within forty-five (45) days after execution of the Contract.

.1 Substitutions and alternates may be rejected without explanation and will be considered only under one or more of the following conditions: (i) the proposal is required for compliance with interpretation of code requirements or insurance regulations then existing; (ii) specified products are unavailable through no fault of the Design-Builder; (iii) and when, in the judgment of the Owner or the Owner's Architect, a substitution would be substantially in the Owner's best interests in terms of cost, time, or other considerations.

.2 The Design-Builder must submit to the Architect and the Owner (i) a full explanation of the proposed substitution and submittal of all supporting data, including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation for the substitution; (ii) a written explanation of the reasons the substitution is necessary, including the benefits to the Owner and the Work in the event the substitution is acceptable; (iii) the adjustment, if any, in the Contract Sum; (iv) the adjustment, if any, in the Contract Time and the construction schedule; and (v) an affidavit stating the (a) proposed substitution conforms to and meets all requirements of the pertinent Specifications and the requirements shown on the Drawings, and (b) the Design-Builder accepts the warranty and correction obligations and will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be completed in all respects as if originally specified by the Architect. Proposals for substitutions shall be submitted to the Owner's Architect and the Owner in sufficient time to allow the Owner's Architect and the Owner no less than twenty-one (21) Business Days for review, unless a shorter time is agreed upon in writing. No substitutions will be considered or allowed without the Design-Builder's submittals of complete substantiating data and information as stated herein.

.3 Whether or not the Owner or the Owner's Architect accepts any proposed substitution, the Design-Builder shall reimburse the Owner for any fees charged by the Owner's Architect or other consultants for evaluating each proposed substitute.

ARTICLE 7 OWNER'S RESPONSIBILITIES

§ 7.1 General

§ 7.1.1 The Owner shall designate a representative pursuant to the terms discussed herein.

§ 7.1.2 The Owner shall render decisions in a timely manner and in accordance with the Design-Builder's schedule agreed to by the Owner. .

§ 7.2 Information and Services Required of the Owner

§ 7.2.1 The Owner shall furnish information or services required of the Owner by the Design-Build Documents with reasonable promptness.

§ 7.2.2 The Design-Builder shall provide the results and reports of prior tests, inspections or investigations conducted for the Project involving structural or mechanical systems; chemical, air and water pollution; hazardous materials; or environmental and subsurface conditions and information regarding the presence of pollutants at the Project site. The Design-Builder shall also provide surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site.

§ 7.2.3 The parties shall cooperate to obtain easements, zoning variances, and legal authorizations or entitlements regarding site utilization where essential to the execution of the Project.

§ 7.2.4 The Owner shall cooperate with the Design-Builder in securing building and other permits, licenses and inspections.

§ 7.2.5 Intentionally deleted.

§ 7.2.6 If the Owner observes or otherwise becomes aware of a fault or defect in the Work or non-conformity with the Design-Build Documents, the Owner shall give prompt written notice thereof to the Design-Builder. Failure by Owner to observe such defect and/or inform Design Builder of same shall not relieve Design Builder of any duty provided herein or at law.

§ 7.2.7 The Owner, being a public body under the laws of the State of Texas, must have adequate funds and/or financing as provided by law prior to award and execution of the Contract Documents.

§ 7.2.8 Except as otherwise provided in the Design-Build Documents or when direct communications have been specially authorized or protocols established with Design-Builder, the Owner and Owner's Architect shall endeavor to communicate through the Design-Builder with persons or entities employed or retained by the Design-Builder, provided that Owner shall be permitted to communicate with such persons or entities in response to an emergency or life-safety threat. Notwithstanding the foregoing, Owner reserves the right to communicate directly with the Design-Builder and Contractors.

§ 7.2.9 The Design-Builder shall furnish the services of geotechnical engineers or other consultants for investigation of subsurface, air and water conditions when such services are reasonably necessary to properly carry out the design services furnished by the Design-Builder. Such services may include, but are not limited to, test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, ground corrosion and resistivity tests, and necessary operations for anticipating subsoil conditions. The services of geotechnical engineer(s) or other consultants shall include preparation and submission of all appropriate reports and professional recommendations. Design Builder shall provide notice of all such costs prior to entering the Design Build Amendment.

§ 7.2.10 The Owner shall purchase and maintain insurance as it determines is necessary and appropriate.

§ 7.3 Submittals

§ 7.3.1 The Owner shall review and approve or take other appropriate action on Submittals. Review of 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; or for determining that the Submittals are in conformance with the Design-Build Documents, all of which remain the responsibility of the Design-Builder as required by the Design-Build Documents. The Owner's action will be taken in accordance with the submittal schedule approved by the Owner or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Owner's judgment to permit adequate review. The Owner's review of Submittals shall not relieve the Design-Builder of the obligations under Sections 3.1.11, 3.1.12, and 5.2.3, or pursuant to any other terms of the Contract. The Owner's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Owner, of any construction means, methods, techniques, sequences or procedures. The Owner's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 7.3.2 Failure by Owner to observe a defect and/or inform Design Builder of same shall not relieve Design Builder of any duty provided herein or at law.

§ 7.4 Visits to the site by the Owner shall not be construed to create an obligation on the part of the Owner to make on-site inspections to check the quality or quantity of the Work. The Owner shall 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, because these are solely the Design-Builder's rights and responsibilities under the Design-Build Documents.

§ 7.5 The Owner shall not be responsible for the Design-Builder's failure to perform the Work in accordance with the requirements of the Design-Build Documents. The Owner shall not have control over or charge of, and will not be responsible for acts or omissions of the Design-Builder, Architect, Consultants, Contractors, or their agents or employees, or any other persons or entities performing portions of the Work for the Design-Builder.

§ 7.6 The Owner has the authority to reject Work that does not conform to the Design-Build Documents. The Owner shall have authority to require inspection or testing of the Work in accordance with Section 15.5.2, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Owner 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 Owner to the Design-Builder, the Architect, Consultants, Contractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 7.7 The Owner shall determine the date or dates of Substantial Completion and Final Completion in accordance with Section 9.8 and the date of final completion in accordance with Section 9.10.

§ 7.8 Owner's Right to Stop Work

If the Design-Builder fails to correct Work which is not in accordance with the requirements of the Design-Build Documents as required by Section 11.2 or persistently fails to carry out Work in accordance with the Design-Build Documents, the Owner may issue a written order to the Design-Builder 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 Design-Builder or any other person or entity, except to the extent required by Section 5.13.1.3. Notwithstanding anything in the foregoing to the contrary, to the extent possible and assuming no emergency or dangerous situation exists, in which event Owner may stop work immediately, Owner shall furnish Design-Builder with at least three (3) days prior notice of Owner's intention to stop the Work so that Design-Builder may have an opportunity to commence to remedy the alleged default which is described in said notice. This right shall be in addition to, and not in restriction of, the Owner's rights under Section 11.2.

§ 7.9 Owner's Right to Carry Out the Work

If the Design-Builder defaults or neglects to carry out the Work in accordance with the Design-Build Documents and fails within a three-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 Design-Builder the reasonable cost of correcting such deficiencies. If payments then or thereafter due the Design-Builder are not sufficient to cover such amounts, the Design-Builder shall pay the difference to the Owner.

§ 7.9.1 After the Work or any portion thereof has stopped prior to final completion, the Owner may make necessary emergency repairs to the Work if necessary to prevent further damage if the Design-Builder does not promptly respond to a notice of a condition requiring repairs. Design-Builder shall be responsible to Owner for this cost if the reason for the repairs is defects in the work provided by the Design-Builder or any of the Design-Builder's consultants, Contractors, suppliers, or materialmen. If payments then or thereafter due the Design-Builder are not sufficient to cover such amounts, the Design-Builder shall pay the difference to the Owner.

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 Design-Build 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 and Final Completion are the dates approved by the Owner.

§ 8.1.4 The term "day" as used in the Design-Build Documents shall mean calendar day unless otherwise specifically defined. The term "business day" shall mean a day on which the Owner's administrative offices are open for business and not a holiday as set forth in Chapter 662 of the Texas Government Code.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Design-Build Documents are of the essence of the Contract. By executing the Design-Build Amendment the Design-Builder confirms that the Contract Time is a reasonable period for performing the Work. The Design-Builder is subject to liquidated damages, as specified in this Agreement, if the Work is not completed by the date of Substantial Completion or the date of Final Completion.

§ 8.2.2 The Design-Builder shall not, except by agreement of the Owner in writing, commence the Work prior to the effective date of bonds and insurance, other than property insurance, required by this Contract. The Contract Time shall not be adjusted as a result of the Design-Builder's failure to obtain insurance required under this Contract.

§ 8.2.3 The Design-Builder 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 Design-Builder is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Owner's Architect, of an authorized employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by fire, governmental actions, adverse weather conditions documented in accordance with Section 8, or other causes beyond the Design-Builder reasonable control which do not arise through the action or inaction of Design Builder or its Contractor, Subcontractor or suppliers, could not have been reasonably anticipated, and could not have been avoided through the exercise of reasonable care or prudent construction management by the Design-Builder; (4) by delay authorized in writing by the Owner; or (5) by other causes that the Design-Builder asserts, and the Owner's Architect and Owner determine, justify delay, then the Contract Time may be extended in writing for such reasonable time as the Owner's Architect and Owner may determine. The foregoing notwithstanding, the Design-Builder shall not be entitled to an extension of time for changes in the Work required due to Design-Builder's fault, or which extend beyond the time extension provided in a Change Order. Nothing in this provision will limit the rights of Owner under other provisions of this Contract. Any provision of the Contract Documents to the contrary notwithstanding, it is expressly agreed that the extension of the Contract Time shall be Design-Builder's sole remedy for any delay unless the same shall have been caused by acts constituting intentional interference by the Owner which materially interfere with Design-Builder's performance of the Work, and then only to the extent that such acts continue after Design-Builder's reasonable prior written notice to Owner of such interference.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 14.

§ 8.3.3 This Agreement does not permit the recovery of damages, including, without limitation, extended home office overhead expenses, general conditions or other consequential damages, by the Design-Builder for delay or disruption or for extensions of time due to bad weather, acts of God, supply chain issues, or market escalation. Design-Builder agrees that Design-Builder shall be fully compensated for all delays solely by an extension of time.

Owner's exercise of any of its rights under the Contract Documents, including without limitation, its rights under Article 6, Changes in the Work, regardless of the extent or number of such changes or Owner's exercise of any of its remedies of suspension of the Work or requirement of correction or re-execution of any defective Work, shall not, under any circumstances, be construed as interference with Design-Builder's performance of the Work and shall not entitle the Design-Builder to any additional compensation.

§ 8.3.4 Anticipated Days: Delays to construction due to adverse weather shall be considered for extensions to the Contract Time, subject to the limitations listed below. Design-Builder shall include in his Contract Time, the number of Anticipated Adverse Weather Days (based on the schedule below) which would otherwise be Regular Work Days. Extensions of Time for adverse weather shall be considered only when Actual Adverse Weather Days exceed Anticipated Adverse Weather Days:

January	6	May	6	September	6
February	6	June	7	October	6
March	5	July	6	November	6
April	4	August	6	December	6

Extensions of Time for Instruction Days shall be considered only when Actual Instructional Days exceed Anticipated Instructional Days:

January	0	May	4	September	0
February	0	June	0	October	0
March	0	July	0	November	0
April	4	August	0	December	0

§ 8.3.5 At the beginning of each month, the Design-Builder shall submit a schedule showing 1) the scheduled number of Anticipated Inclement Weather Days for the particular month, 2) the Actual Inclement Weather Days requested, and 3) the Net Inclement Weather Days (plus, minus, or no charge). At appropriate times, the Contract Time will be adjusted by Change Order if the total of Net Inclement Weather Days is substantially greater than 0. If at the end of the Project, all Anticipated Inclement Weather Days have not been used, then the Contract Time will not be reduced.

§ 8.3.5.1 Although the Contractor is required to document the occurrence and effect of Adverse Weather or Instruction Days on the Work, it does not relieve the Contractor/Architect of its responsibility to investigate and determine if an excusable delay has occurred.

§ 8.3.5.2 The schedule of Anticipated Adverse Weather Days and Instruction Days included in the Contract is established in Work Days. Similarly, actual weather data should be collected and recorded on a Work Day basis. Monthly summaries should be maintained indicating actual Adverse Weather conditions or Instruction Days and the impact on Work activities.

§ 8.3.5.3 To determine if a given month experienced Adverse Weather Days or Instruction Days, the number of actual Adverse Weather Days or Instruction Days is subtracted from the Anticipated Adverse Weather Days or Anticipated Instruction Days. If the number of Adverse Weather Days or Instruction Days is greater than the Anticipated Adverse Weather Days or Anticipated Instruction Days for a given month, then the Contractor has experienced unusually severe weather or Work disruption for the given month. If the number of Adverse Weather Days or Instruction Days is less than the Anticipated Adverse Weather Days or Anticipated Instruction Days for a given month, then the Net Days shall accumulate to the remaining months and shall be treated as float to the Project. Float time contained in the Design-Builder's Construction Schedule is not for the exclusive benefit of the Design-Builder or the Owner, but belongs to the Project and may be consumed by either party as needed on a first-used basis.

An example of the monthly schedule to be submitted is as follows:

Month	Anticipated Inclement Weather Days(Regular)	Actual Weather Days(Regular) Requested	Net Adverse Weather Days(Regular)
January	6	8	2
February	6	6	0
March	5	7	2

April	4	6	2
May	6	5	-1
June	7	9	2
TOTAL	34	41	7

Using this example, there were seven (7) Net Adverse Weather Days (regular) for the first six (6) months of the Project and the extension of Contract Time would be eight (8) calendar days (since a seven (7) calendar days extension is granted after six (6) Regular Work Days are lost).

§ 8.3.6 The Design-Builder shall have no claim for compensation or damages due to weather delays in, or hindrances to, the Work and further agrees that the Design-Builder shall be fully compensated for *weather related* delays solely by a time extension.

§ 8.3.7 No time extension shall release the Design-Builder or the Surety furnishing a performance or payment bond from all obligations there under; which obligations shall remain in full force until the discharge of the Contract.

§ 8.4 Notwithstanding any provision contained in the Contract, if the parties are in agreement on the date set for Substantial Completion, if the Work has not attained Substantial Completion within the Contract Time as may be adjusted under the Contract, Owner may withhold any further payment to Design-Builder to the extent necessary to preserve sufficient funds to complete the construction of the Project and to cover liquidated damages assessed against the Design-Builder up to the time of the Application for Payment and to the time it is reasonably anticipated that Substantial Completion will be achieved.

8.5 No extension of time shall be made to the Design-Builder because of hindrances or delays from any cause which is the fault of Design-Builder or Design-Builder's Subcontractors or under Design-Builder's control. Claims for extension of time may only be considered because of rain delays, or because of hindrances or delays which are the fault of Owner and/or under Owner's control, but only to the extent that Substantial Completion of the Project is adjusted beyond the original Substantial Completion date. Board approval shall be required for any extension of time. No damages shall be paid for delays. Contractor shall only be entitled to time extensions per the terms of the Contract Documents.

8.6 Requests for time extension shall be submitted on a monthly basis and shall specify the time delay, the cause of the delay, and the responsible party for the delay, whether Design-Builder, Owner, rain day, or other. Any claim not submitted under the terms of this Section shall be waived.

ARTICLE 9 PAYMENT APPLICATIONS AND PROJECT COMPLETION

§ 9.1 Contract Sum

The Contract Sum is stated in the Design-Build Amendment and, including authorized adjustments, is the total amount payable by the Owner to the Design-Builder for the satisfactory performance of the Work under the Design-Build Documents. All costs of overtime work required by the Contract Time and the nature of the Work, as set forth in or inferable from the Design-Build Documents, shall be and are included in the Contract Sum.

§ 9.2 Schedule of Values

Where the Contract Sum is based on a stipulated sum, the Design-Builder, prior to the first Application for Payment after execution of the Design-Build Amendment shall submit to the Owner a commercially reasonable 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 Owner may require. This schedule, unless objected to by the Owner, shall be used as a basis for reviewing the Design-Builder's Applications for Payment. The Owner may object if such schedule is not commercially reasonable, and upon such objection, the Design Builder shall amend same to make it commercially reasonable. The schedule shall not overvalue early job activities. Each item shall include a pro rata portion of overhead and profit. The schedule shall follow the trade divisions of the Specifications so far as practicable. The schedule of values shall be prepared in such a manner that each major item of Work, whether done by Design-Builder's own forces or by Contractors, is shown as a single line item on Design-Builder's Application for Payment. Design-Builder's fee shall be shown as a separate line item.

§ 9.2.2 In order to facilitate the review of Applications for Payment, the Schedule of Values shall include Design-Builder's cost for Design-Builder's fee, bonds and insurance, mobilization, allowances, and similar items shall be listed as individual line items. Design-Builder's General Conditions shall be indicated as a proportion of the Cost of

the Work, and include allowances as a Cost of the Work. If allowances are not fully spent, the amount due to the Design-Builder shall be proportionally reduced. Design Builder's costs for various construction items in the Schedule of Values 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. All parties expressly acknowledge and agree that any and all individual line items on the Schedule of Values in the Contract Sum are not separately and individually guaranteed by the Design-Builder; rather, only the Contract Sum is guaranteed.

§ 9.3 Applications for Payment

§ 9.3.1 At least 30 days before the date established for each progress payment, the Design-Builder shall submit to the Owner an itemized Application for Payment for completed portions of the Work. The application shall be notarized, if required, and supported by data substantiating the Design-Builder's right to payment as the Owner may require, such as copies of requisitions from the Architect, Consultants, Contractors, and material suppliers, and shall reflect retainage if provided for in the Design-Build Documents. The Design-Builder shall submit Applications for Payment in quadruplicate using AIA Document G702-1992 and G703-1992 Application and Certificate for Payment, 2009 Edition. All blanks in the form must be completed and signatures of Design-Builder and Notary Public must be original on each form. Design-Builder agrees that, for purposes of Texas Government Code section 2251.042, receipt of the Application for Payment shall not be construed as receipt of an invoice by the Owner. Notwithstanding any provision to the contrary contained herein, all payments by Owner shall be subject to the Texas Prompt Payment Act, Tex. Gov't Code, §2251.

§ 9.3.1.1 Intentionally deleted.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Design-Builder does not intend to pay the Architect, Consultant, Contractor, material supplier, or other persons or entities providing services or work for the Design-Builder, unless such Work has been performed by others whom the Design-Builder intends to pay.

§ 9.3.2 Unless otherwise provided in the Design-Build Documents, payments shall be made for services provided as well as materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner at Owner's discretion, 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 Design-Builder 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 Design-Builder warrants that title to all Work, other than Construction Documents, covered by an Application for Payment will pass to the Owner no later than the time of payment. The Design-Builder 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 Design-Builder's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Design-Builder, Architect, Consultants, Contractors, material suppliers, or other persons or entities entitled to make a claim by reason of having provided labor, materials and equipment relating to the Work. No work, material, or equipment covered by an Application for Payment shall be subject to an agreement under which an interest is retained or an encumbrance is attached by the seller, the Design-Builder, or other party. DESIGN-BUILDER SHALL INDEMNIFY AND HOLD OWNER HARMLESS FROM ANY LIENS, CLAIMS, SECURITY INTEREST, OR ENCUMBRANCES FILED BY THE DESIGN-BUILDER, CONTRACTORS, OR ANYONE CLAIMING BY, THROUGH, OR UNDER THE DESIGN-BUILDER OR CONTRACTOR FOR ITEMS COVERED BY PAYMENTS MADE BY THE OWNER TO DESIGN-BUILDER.

§ 9.3.3.1 All progress payment requests shall be accompanied by (i) an itemization of all Contractors, Subcontractors, and material suppliers, the amounts due each and the amounts to be paid out of said progress payment to each of them and (ii) by unconditional lien waivers releasing all liens and lien rights with respect to Work for which Owner has made payment under a prior progress payment request in a form reasonably satisfactory to Owner from Design-Builder and all its Contractor's and material suppliers with contracts in excess of $25,000.00 (Evidence of prior progress payment shall apply to progress payments 61-days or older). When Design-Builder submits its request for payment of retainage, Design-Builder shall submit "All Bills Paid" affidavits and unconditional final lien waivers fully releasing all liens and lien rights with respect to the Work in a form reasonably

satisfactory to Owner from Design-Builder and all its Contractor, Subcontractors, and material suppliers with contracts in excess of $25,000.00. Applications for Payment shall be certified as correct by Design-Builder. When requested by Owner, each Application for Payment shall also be accompanied by Certified Payrolls and such other affidavits, certificates, information, data and schedules as Owner may reasonably require. The Owner is not required to make any payment to Design-Builder to the extent reasonably necessary to protect Owner. In addition to the other requirements of this Article, the initial Application for Payment shall be proceeded or accompanied by the following:

1. List of subcontractors,
2. Schedule of values,
3. Contractor's construction schedule (preliminary if not final),
4. If applicable, Combined Design-Builder's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor,
5. Products list (preliminary if not final),
6. Schedule of unit prices,
7. Submittal schedule (preliminary if not final),
8. List of Design-Builder's staff assignments,
9. List of Design-Builder's principal consultants,
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work,
11. Initial progress report,
12. Report of preconstruction conference,
13. Certificates of insurance and insurance policies,
14. Performance and payment bonds,
15. Data needed to acquire Owner's insurance, and
16. Initial settlement survey and damage report if required

In addition to the other requirements of this Article, each subsequent Application for Payment shall be accompanied by:

1. Updated Microsoft Project schedule,
2. Log of Adverse Weather Days, and Instructional Days, including backup documentation,
3. Where Unit Costs are in use, measurements for payments will be made only for actual measured and/or computed length, area, solid contents, number, and weight, unless other provisions are made in the Contract Documents. Payment on a unit price basis will not be made for Work outside finished dimensions shown in the Contract Documents. Include costs for waste, overages and tolerances in the unit price for that line item, and
4. Measurements for unit price quantities will be verified by the Owner's Architect in conjunction with the Design-Builder via inspection of the Work prior to submittal of interim Applications for Payment

§ 9.4 Certificates for Payment

The Owner shall, within seven days after receipt of the Design-Builder's Application for Payment, issue to the Design-Builder a Certificate for Payment indicating the amount the Owner determines is properly due, and notify the Design-Builder in writing of the Owner's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Owner will rely upon the accuracy of the Application for Payment and supporting documentation furnished by the Contractor in authorizing minor changes and expenditures against Allowances. Therefore, the Contractor agrees that any arithmetic error made by the Contractor in any Application for Payment and supporting documents such as contingency logs or allowance balances shall not create an obligation on the part of the Owner to pay additional sums to correct previously approved Applications for Payment. **CONTRACTOR SHALL INDEMNIFY AND HOLD OWNER HARMLESS FROM ANY LIENS, CLAIMS, SECURITY INTERESTS OR ENCUMBRANCES FILED BY THE CONTRACTOR, SUBCONTRACTORS, OR ANYONE CLAIMING BY, THROUGH OR UNDER THE CONTRACTOR OR SUBCONTRACTOR FOR ITEMS COVERED BY PAYMENTS MADE BY THE OWNER TO CONTRACTOR.**

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Owner may withhold a Certificate for Payment in whole or in part to the extent reasonably necessary to protect the Owner due to the Owner's determination that the Work has not progressed to the point indicated in the Design-Builder's Application for Payment, or the quality of the Work is not in accordance with the Design-Build

Documents. If the Owner is unable to certify payment in the amount of the Application, the Owner will notify the Design-Builder as provided in Section 9.4. If the Design-Builder and Owner cannot agree on a revised amount, the Owner will promptly issue a Certificate for Payment for the amount that the Owner deems to be due and owing. The Owner 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 to protect the Owner from loss for which the Design-Builder is responsible because of

.1 defective Work, including design and construction, 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 Design-Builder;
.3 failure of the Design-Builder to make payments properly to the Architect, Consultants, Contractors or others, for services, 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;
.7 repeated failure to carry out the Work in accordance with the Design-Build Documents; or
.8 failure to submit a written plan indicating action by the Design-Builder to regain the time schedule for completion of Work within the Contract time.
.9 evidence of financial inability to perform the Contract fully;
.10 failure to submit record documents required by the Contract; or
.11 failure of the Design-Builder to perform any other obligations of the Contract.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default by reason of withholding payment as provided for in subparagraph 9.5.1.

§ 9.5.3 If the Owner withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Design-Builder and to the Architect or any Consultants, Contractor, material or equipment suppliers, or other persons or entities providing services or work for the Design-Builder to whom the Design-Builder failed to make payment for Work properly performed or material or equipment suitably delivered.

§ 9.5.4 Notwithstanding any provision contained within this Contract, if the Work has not attained Substantial Completion within the date scheduled for Substantial Completion, subject to extensions of time allowed under the General Conditions, the Owner may withhold any further payment to Design-Builder to the extent necessary to preserve sufficient funds to complete the construction of the Project and to cover liquidated damages assessed against Design-Builder up to the time of the Application for Payment and to the time it is reasonably anticipated that Substantial Completion will be achieved. The Owner shall not be deemed in default by reason of withholding payment as provided for herein.

§ 9.6 Progress Payments

§ 9.6.1 After the Owner has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Design-Build Documents.

§ 9.6.2 The Design-Builder shall pay each Architect, Consultant, Contractor, and other person or entity providing services or work for the Design-Builder no later than the time period required by applicable law, but in no event more than seven days after receipt of payment from the Owner the amount to which the Architect, Consultant, Contractor, and other person or entity providing services or work for the Design-Builder is entitled, reflecting percentages actually retained from payments to the Design-Builder on account of the portion of the Work performed by the Architect, Consultant, Contractor, or other person or entity. The Design-Builder shall, by appropriate agreement with each Architect, Consultant, Contractor, and other person or entity providing services or work for the Design-Builder, require each Architect, Consultant, Contractor, and other person or entity providing services or work for the Design-Builder to make payments to subconsultants and subcontractors in a similar manner. Owner is not obligated to monitor payments to subconsultants and subcontractors, and nothing in this section shall create any right on the part of a subconsultant or subcontractor against Owner. If the Design-Builder has failed to make payment promptly to the Design-Builder's Architect, Consultant, Contractor, or other person or entity or for materials or labor used in the Work for which the Owner has made payment to the Design-Builder, the Owner shall be entitled to withhold payment to the Design-Builder in part or in whole to the extent necessary to protect the Owner. If the Owner becomes aware that Design-Builder is not current in its legitimate obligations to each

Architect, Consultant, Contractor, and other person or entity providing services or work for the Design-Builder on the Project, Owner may (but is not obligated to) withhold payment until it receives reasonable proof from the Design-Builder that this situation no longer exists.

§ 9.6.3 The Owner will, on request and if practicable, furnish to the Architect, a Consultant, Contractor, or other person or entity providing services or work for the Design-Builder, information regarding percentages of completion or amounts applied for by the Design-Builder and action taken thereon by the Owner on account of portions of the Work done by such Architect, Consultant, Contractor or other person or entity providing services or work for the Design-Builder.

§ 9.6.4 The Owner has the right to request written evidence from the Design-Builder that the Design-Builder has properly paid the Architect, Consultants, Contractors, or other person or entity providing services or work for the Design-Builder, amounts paid by the Owner to the Design-Builder for the Work. If the Design-Builder fails to furnish such evidence within seven days, the Owner shall have the right to contact the Architect, Consultants, and Contractors to ascertain whether they have been properly paid. The Owner shall have no obligation to pay or to see to the payment of money to a Consultant or Contractor, except as may otherwise be required by law.

§ 9.6.5 Design-Builder 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 Design-Build Documents.

§ 9.6.7 Unless the Design-Builder provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Design-Builder for Work properly performed by the Architect, Consultants, Contractors and other person or entity providing services or work for the Design-Builder, shall be held by the Design-Builder for the Architect and those Consultants, Contractors, or other person or entity providing services or work for the Design-Builder, 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 Design-Builder.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Design-Builder shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Architect, Consultants, Contractors, or other person or entity providing services or work for the Design-Builder, of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Design-Builder. If approved by the applicable court, when required, the Design-Builder may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

§ 9.7.1 If the Owner does not pay Design-Builder any undisputed amount that is due and owing under this Contract within fifteen (15) days of the date when it is overdue in accordance with Texas Government Code § 2251.021, then the Design-Builder may, upon ten (10) additional days' written notice or such time period established by Chapter 2251 of the Texas Government Code, whichever is later, stop the Work until payment of the undisputed amount owing has been received. The Contract Time shall be extended appropriately, by the Design-Builder's actual reasonable delay in shutdown and start-up and the Contract Sum shall be increased for any demobilization or remobilization costs.

§ 9.7.2 If the Owner is entitled to reimbursement or payment from the Design-Builder under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Design-Builder fails to promptly make any payment due to Owner, or the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective Work, pursuant to the Contract, the Owner shall have a right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to:

.1 Deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due to Design-Builder from the Owner; or

.2 Issue a written notice to the Design-Builder reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 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 Design-Build Documents so that the Owner can occupy or utilize the Work for its intended use; all Project systems included in the Work or designated portion thereof have been successfully tested and are fully operational; all required governmental inspections and certifications required by the Work have been made, approved, and posted; designated initial instruction of Owner's personnel in the operation of Project systems has been completed; and all the required finishes set out in the Construction Documents are in place. The only remaining Work shall be minor in nature so that the Owner can occupy the Work or the applicable portion of the Work for all of its intended purposes on that date; and the completion of the Work by the Design Builder will not materially interfere with or hamper Owner's normal school operations or other intended use. As a further condition of a determination of Substantial Completion, the Design-Builder shall certify that all remaining Work shall be completed by the time stated in the Design-Build Amendment. Design-Builder shall complete Owner's Substantial Completion Certificate. The date of Substantial Completion is the date certified by the Owner in accordance with this Section 9.8. In the event Substantial Completion is not achieved by the designated date, or as it may be extended, Owner may withhold payment of any further sums due until Substantial Completion is achieved. Owner shall also be entitled to deduct out of any sums due to Contractor any or all Liquidated Damages due Owner in accordance with the Contract Documents. In addition to the requirements of the Contract Documents, it is expressly understood that the establishment of Substantial Completion is subject to the following:

1. All fire alarm system components must be completed and demonstrated to the Owner.
2. Local fire marshal approval certificate must be delivered to the Owner.
3. All HVAC air and water balancing must be complete.
4. All Energy Management Systems must be complete and fully operational and demonstrated to the Owner.
5. All school communications equipment and telephone systems must be complete and demonstrated to the Owner.
6. All final lockset cores and keys must be installed, and labeled with a bitting list.
7. All room plaques and exterior signage must be complete.
8. All Owner demonstrations and training must be completed, including kitchen equipment, HVAC equipment, plumbing equipment, and electrical equipment.
9. All exterior clean-up and landscaping must be complete.
10. All final interior clean-up must be complete.
11. A final Certificate of Occupancy conforming to the requirements of the location jurisdictional authority must be signed by the Contractor and delivered to the Owner.
12. All operation and maintenance manuals must be submitted to the Architect, approved by the Architect, and delivered to the Owner.
13. Flood elevation certificate furnished and accepted by all authorities having jurisdiction, including but not limited to the County in which the Project is located.
14. Temporary facilities and utility services have been removed

§ 9.8.2 When the Design-Builder considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Design-Builder shall, using the Owner's Project Management Software, prepare and submit to the Owner a comprehensive list of items to be completed or corrected prior to final payment. The punch list shall contain an area or room description, and a photograph of each deficiency listed in the punch list and a space for contractor and architect to individually indicate the date of the correction and observation of the correction, respectively. Failure to include an item on such list does not alter the responsibility of the Design-Builder to complete all Work in accordance with the Design-Build Documents.

§ 9.8.2.1 The Design-Builder's Project Manager or superintendent shall participate in the preparation of the Design-Builder's punch list that is submitted to the Owner's Architect and Owner for supplementation. Upon receipt, the Owner's Architect shall perform a spot review to determine the adequacy and completeness of the Design-Builder's punch list. Should the Owner's Architect determine that the Design-Builder's punch list lacks sufficient detail or requires extensive supplementation, the punch list will be returned to the Design-Builder for further inspection and revision. The date of Substantial Completion will be delayed until the punch list submitted is a reasonable representation of the Work to be done.

§ 9.8.2.2 Upon receipt of an acceptable Design-Builder's punch list, the Design-Builder's Superintendent or Project Manager shall accompany the Owner's Architect, and the Owner (at his discretion) during their inspections and the

preparation of verbal or written additions to the Design-Builder's punch list. The Design-Builder's Project Manager or Superintendent shall record or otherwise take notes of all supplementary items and incorporate into the Final Punch List. A typed addition to the supplements to the punch list will be made by the Design-Builder. This procedure will produce a Final Punch List that has the Design-Builder's, Owner's Architect's, and Owner's comments incorporated in only one list using the Owner's Project Management Software. Delay in the preparation of the Final Punch List shall not be cause for a claim for additional cost or extension of time as the Design-Builder's superintendent shall have been in attendance during the inspections of the Owner's Architect and its consultants and will have been expected to have taken appropriate own notes.

§ 9.8.2.3 The Design-Builder's Project Manager or Superintendent shall have been in attendance during the inspections of the Owner's Architect and will have been expected to take his own notes for addition to the Final Punch List.

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

§ 9.8.4 Prior to issuance of the Certificate of Substantial Completion under Section 9.8.5, the Owner and Design-Builder shall discuss and then determine the parties' obligations to obtain and maintain property insurance following issuance of the Certificate of Substantial Completion.

§ 9.8.5 When the Work or designated portion thereof is substantially complete, the Design-Builder will prepare for the Owner's signature a Certificate of Substantial Completion that shall, upon the Owner's signature, establish the date of Substantial Completion; establish responsibilities of the Owner and Design-Builder for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Design-Builder shall finish all items on the list accompanying the Certificate. Warranties required by the Design-Build Documents shall commence on the date of Final Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.6 The Certificate of Substantial Completion shall be submitted by the Design-Builder to the Owner for written acceptance of responsibilities assigned to it in the Certificate. Retainage is not due to the Design-Builder until thirty-one (31) days after final completion of the Work as set out in Paragraph 9.10. After the Certificate of Substantial Completion is accepted by the Owner, the Owner may, in its sole discretion and upon acceptance and consent of surety, make payment of retainage on all or a part of the Work accepted.

§ 9.8.6.1 The issuance of a Partial Certificate of Substantial Completion shall not relieve the Design-Builder from the obligation to obtain Substantial Completion for the portions of the project not included in the Partial Certificate of Substantial Completion by the dates indicated in this Agreement. The issuance of a Partial Certificate of Substantial Completion shall not relieve the Design-Builder from the assessment of liquidated damages for the portions of the project not included in the Partial Certificate of Substantial Completion by the dates indicated in this Agreement.

§ 9.8.6.2 Retainage is not due to the Design-Builder until thirty-one (31) days after Final Completion of the Work as set out in Section 9.10. After the Certificate of Substantial Completion is accepted by the Owner, the Owner may, at its sole discretion and upon acceptance and consent of surety, make payment of retainage on all or a part of the Work accepted. Final Completion includes submittal of all required closeout and record documents The Design-Builder's request for retainage payment shall be accompanied by the Design-Builder's Affidavit of Payment of Debts and Claims or a comparable affidavit on a form acceptable to Owner. This document must be executed under oath and notarized.

§ 9.8.7 In the event Substantial Completion is not achieved by the designated date, or as it may be extended, Owner may withhold payment of any further sums due until Substantial Completion is achieved. Owner shall also be entitled to deduct out of any sums due to Design-Builder any or all liquidated damages due Owner.

§ 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 agreed to by the Owner and the Design-Builder in writing, provided such occupancy or use is consented to by the insurer 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 that the Owner and Design-Builder have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work resulting from such occupancy, use or installation, and property and liability insurance, Consent of the Design-Builder 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 Design-Builder. Design-Builder agrees that the Owner may place and install as much equipment and furnishings as is possible before completion or partial completion of portions of the Work.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner and Design-Builder 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, in writing, 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 Design-Build Documents, nor shall it constitute evidence of Substantial Completion or Final Completion.

§ 9.9.4 In the event that Owner takes partial occupancy prior to Substantial Completion of the Project, Design-Builder shall obtain to the best of Design-Builder's ability an endorsement to Design-Builder's risk policy to provide extended coverage for partial occupancy if Design-Builder's risk coverage under the Contract Documents would not otherwise provide such coverage.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Design-Builder's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner will promptly make such inspection. When the Owner finds the Work acceptable under the Design-Build Documents and the Contract fully performed, the Owner will, subject to Section 9.10.2, issue a final Certificate for Payment in compliance with the Prompt Payment Act.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Design-Builder submits to the Owner (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 Design-Build Documents to remain in force after final payment is currently in effect and will not be cancelled or allowed to expire until at least (30) days prior written notice has been given to Owner, (3) a written statement that the Design-Builder knows of no substantial reason that the insurance will not be renewable to cover the period required by the Design-Build Documents, (4) consent of surety, if any, to final payment, (5) as-constructed record copy of the Construction Documents marked to indicate field changes and selections made during construction, (6) manufacturer's warranties, product data, and maintenance and operations manuals, and (7) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, or 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 an Architect, a Consultant, or a Contractor, or other person or entity providing services or work for the Design-Builder, refuses to furnish a release or waiver required by the Owner, the Design-Builder may furnish a bond satisfactory to the Owner to indemnify the Owner against such liens, claims, security interests, or encumbrances. If such liens, claims, security interests, or encumbrances remains unsatisfied after payments are made, the Design-Builder shall refund to the Owner all money that the Owner may be compelled to pay in discharging such liens, claims, security interests, or encumbrances, including all costs and reasonable attorneys' fees. In addition, the following items must be completed and received by the Owner before Final Payment will be due:

- **.1** Written certifications required by Sections 10.5, 10.6, and 10.7;
- **.2** Final list of subcontractors (AIA Document G705);
- **.3** Design-Builder's certification in Texas Education Agency's Certification of Project Compliance, located at www.tea.state.tx.us/school.finalce/facilities/cert_2004.pdf;
- **.4** Design-Builder's warranties, organized as required elsewhere in the Contract Documents;
- **.5** Maintenance and Instruction Manuals;

.6 Owner's Final Completion Certificate; and

.7 "As-constructed record drawings." At the completion of the Project, the Design-Builder shall submit one (1) complete set of "as-constructed" record drawings, with all changes made during construction, including concealed mechanical, electrical, and plumbing items. The Design-Builder shall submit these as native CAD file format, printed copy, and PDF copies in the discretion of the Owner.

The "as-constructed" record drawings shall delete the seal of the Architect and/or the Engineer and any reference to those firms providing professional services to the Owner, except for historical or reference purposes.

Documents identified as affidavits must be notarized. All manuals will contain an index listing the information submitted. The Index section will be divided and identified by tabbing each section as listed in the index. Final payment shall be paid by the Owner to the Design-Builder within thirty (30) days after Owner's Board of Trustees has voted to accept the Work and approve Final Payment.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Design-Builder or by issuance of Change Orders affecting final completion, the Owner shall, upon application by the Design-Builder, and without terminating the Contract, make payment of the undisputed 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 Design-Build 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 Design-Builder to the Owner prior to issuance of 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 not constitute a waiver of any Claims under Article 14 by the Owner or a waiver of any latent defects discovered after Final Completion.

§ 9.10.5 Acceptance of final payment by the Design-Builder shall constitute a waiver of claims by the Design-Builder except those previously made in writing that comply with the requirements of Article 14 and except for any defenses to Claims of the Owner that could have been asserted up to Final Payment.

9.10.6 ALLOCATION OF OWNER'S ADDITIONAL COSTS

In addition to any liquidated damages payable to the Owner by the Design-Builder, if: (1) the Owner is required to make more than two (2) inspections for Substantial Completion; (2) the Owner is required to make more than two (2) inspections for Final Completion; or (3) the Work is not substantially complete within sixty (60) days after the date established for Substantial Completion in the Contract Documents; the Owner shall be entitled to deduct from the Contract Sum amounts paid to any Consulting Architect or other Consultant hired by the Owner for any additional inspections or services.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Design-Builder shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract, and shall conform to all provisions of the "Manual of Accident Prevention in Construction," published by the Associated General Contractors of America, Inc., latest edition.

10.1.2 Design-Builder's employees, agents, and Contractors shall not perform any service under this Contract while under the influence of alcohol or any controlled substance. Design-Builder, its employees, agents, and Contractors shall not use, possess, distribute, or sell illicit or unprescribed controlled drugs or drug paraphernalia, or misuse legitimate prescription drugs while performing the Work. Design-Builder, its employees, agents, and Contractors shall not use, possess, distribute, or sell alcoholic beverages while performing the Work.

10.1.3 Design-Builder has adopted or will adopt its own policy to assure a drug and alcohol free workplace while performing the Work. Design-Builder will remove any of its employees from performing the Work any time there is suspicion of alcohol and/or drug use, possession, or impairment involving such employee, and at any time an incident occurs where drug or alcohol use could have been a contributing factor. Owner has the right to require Design-Builder to remove employees from performing the Work any time cause exists to suspect alcohol or drug use. In such cases, Design-Builder's employees may only be considered for return to work after the Design-Builder certifies as a result of a for-cause test, conducted immediately following removal that said employee was in

compliance with this Contract. Design-Builder will not use an employee to perform the Work who either refuses to take, or tests positive in any alcohol or drug test.

10.1.4 Design-Builder will comply with all applicable federal, state, and local drug and alcohol related laws and regulations (e.g., Department of Transportation regulations, Department of Defense Drug-free Work-free Workforce Policy, Drug-Free Workplace Act of 1988). Owner has also banned the presence of all weapons on the Project Site, whether or not the owner thereof has a permit for a concealed weapon.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Design-Builder shall be responsible for precautions for the safety of, and 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 Design-Builder or the Architect, Consultants, or Contractors, or other person or entity providing services or work for the Design-Builder; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, or structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Design-Builder 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 Design-Builder shall implement, 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 notify owners and users of adjacent sites and utilities of the safeguards and protections. The Design-Builder shall also be responsible, included in the Contract Sum for all measures necessary to protect any property adjacent to the Project and Improvements thereon. Any damage to such property or improvements shall be promptly repaired by the Design-Builder.

§ 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 Design-Builder shall exercise utmost care, and carry on such activities under supervision of properly qualified personnel. When use or storage of explosives or other Hazardous Substances (as hereinafter defined) or equipment or unusual construction methods are necessary, the Design-Builder shall give the Owner reasonable advance notice of the presence or use of such materials, equipment, or methods. Design-Builder shall be responsible for any Hazardous Substances Design-Builder or Design-Builder's employees, contractors, consultants, contractors, materialmen, and suppliers use, store, or otherwise introduce to the Premises.

§ 10.2.5 The Design-Builder shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Design-Build Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3, caused in whole or in part by the Design-Builder, the Architect, a Consultant, a Contractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Design-Builder 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 anyone directly or indirectly employed by the Owner, or by anyone for whose acts the Owner may be liable, and not attributable to the fault or negligence of the Design-Builder. The foregoing obligations of the Design-Builder are in addition to the Design-Builder's obligations under Section 3.1.14.

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

§ 10.2.7 The Design-Builder shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition, nor shall Design-Builder subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

§ 10.2.8 Injury or Damage to Person or Property. If the Owner or Design-Builder suffers injury or damage to person or property because of an act or omission of the other, or of others for whose acts such party is legally responsible,

written notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 When all or a portion of the Work is suspended for any reason, the Design-Builder shall do all things necessary to protect the Owner's premises and all persons from damage and injury.

§ 10.2.10 The Design-Builder shall promptly report in writing to the Owner all accidents arising out of or in connection with the work that cause death, personal injury, or property damage. In the event, that the Owner, or any agent or representative of the Owner, becomes a party to a lawsuit or other proceeding involving such accident or event or reasonably anticipates the filing of a lawsuit or institution of a proceeding involving such accident or event, the Design-Builder shall provide full details of the accident or event and any and all statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages occur, the Design-Builder shall report the event immediately by telephone or messenger to the Owner.

§ 10.2.11 The Design-Builder shall be responsible for the protection and security of the Work and the Project, until the receipt by the Design-Builder of written notification that the Substantial Completion of the Work has been accepted by the Board of Trustees.

§ 10.3 Hazardous Materials

§ 10.3.1 Notwithstanding anything in the Contract Documents to the contrary, Owner shall not be responsible for any Hazardous Materials or Substances used, stored, or otherwise introduced to the Premises by the Design-Builder or Design-Builder's employees, Contractors, or other person over whom Design-Builder has responsibility or control under this Contract. The Design-Builder is responsible for compliance with any requirements included in the Design-Build Documents regarding hazardous materials. If the Design-Builder encounters a hazardous material or substance not addressed in the Design-Build 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 Design-Builder, the Design-Builder shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner in writing.

§ 10.3.2 Upon receipt of the Design-Builder'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 Design-Builder and, in the event such material or substance is found to be present, to cause it to be rendered harmless. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Design-Builder. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Design-Builder's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 Intentionally deleted.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Design-Builder brings to the site unless such materials or substances are required by the Owner's Criteria. When use or storage of explosives or other such Hazardous Substance or equipment at the Site is necessary for the Work, the Design-Builder shall give Owner a written request for same. No work shall proceed involving such storage or use unless approved in writing by the Owner.

§ 10.3.5 The Design-Builder shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Design-Builder brings to the site and negligently handles, or (2) where the Design-Builder 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 Intentionally deleted.

§ 10.4 Emergencies

§ 10.4.1 In an emergency affecting safety of persons or property, the Design-Builder shall act, at the Design-Builder's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Design-Builder on account of an emergency, if any, shall be determined as provided in this Agreement.

§ 10.4.2 The performance of the Work by the Design-Builder shall not relieve the Contractors of their responsibility for the safety of persons and property and for compliance with all federal, state and local statutes, rules, regulations and orders of any governmental authority applicable to the conduct of the Work.

10.5 To the extent that any portion of the Work requires a trench excavation exceeding five (5') feet in depth, in accordance with Texas Health and Safety Code § 756.023(a), Design-Builder shall fully comply, and shall require any applicable subcontractor to comply, with:

.1 The Occupational Safety and Health Administration standards for trench safety in effect for the Construction of the Work;
.2 The special shoring requirements, if any, of the Owner;
.3 Any geotechnical information obtained by Owner for use by the Design-Builder in the design of the trench safety system; and
.4 Trench excavation safety protection shall be a separate pay item and shall be based on linear feet of trench excavated. Special shoring requirements shall also be a separate pay item and shall be based on the square feet of shoring use.

10.5.1 The Design-Builder shall review Subcontractor safety programs, procedures, and precautions in connection with performance of the Work. However, the Design-Builder's duties shall not relieve any Subcontractor(s) or any other person or entity (e.g. a supplier), including any person or entity with whom the Design-Builder does not have a contractual relationship, of their responsibility or liability relative to compliance with all applicable federal, state, and local laws, rules, regulations, and ordinances which shall include the litigation to provide for the safety of their employees, persons, and property and their requirements to maintain a work environment free of recognized hazards. The foregoing notwithstanding, the requirements of this Paragraph are not intended to impose upon the Design-Builder any additional obligations that the Design-Builder would not have under any applicable state or federal laws, including, but not limited to, any rules, regulations, or statutes pertaining to the Occupations Safety and Health Administration.

ARTICLE 11 UNCOVERING AND CORRECTION OF WORK

§ 11.1 Uncovering of Work

The Owner may request to examine a portion of the Work that the Design-Builder has covered to determine if the Work has been performed in accordance with the Design-Build Documents. If such Work is in accordance with the Design-Build Documents, the Owner and Design-Builder shall execute a Change Order to adjust the Contract Time and Contract Sum, as appropriate. If such Work is not in accordance with the Design-Build Documents, the costs of uncovering and correcting the Work shall be at the Design-Builder's expense and the Design-Builder shall not be entitled to a change in the Contract Time 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 and the Contract Time will be adjusted as appropriate.

.1 If a portion of the Work has been covered and the Owner has specifically requested to see such Work, or if any known deficiencies exist, or the Design-Build Documents specifically request inspection prior to its being covered, the Owner may request to see that Work and it shall be uncovered by the Design-Builder. If the work is not in accordance with the Design-Build Documents, it must be corrected and covered at the expense of the Design-Builder. If the Work is according to the Design-Build Documents, the cost to restore cover on the Work is at the sole expense of the Design-Builder.
.2 Where deficiencies are observed and noted, in addition to listing in the Site Visit Reports, the Owner may, at his/her own discretion, institute a "Notice to Comply" form (NTC) citing the deficiency. Only one item per notice will be listed in order to enable each individual deficiency to be tracked until corrected.

§ 11.2 Correction of Work

§ 11.2.1 Before or After Substantial Completion. The Design-Builder shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Design-Build 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 any design consultant employed by the Owner whose expenses and compensation were made necessary thereby, shall be at the Design-Builder's expense.

11.2.1.1 The Owner may make emergency repairs to the Work or take such other measures necessary under the circumstances, if the Design-Builder does not promptly respond to a notice of defect or nonconforming Work. Design-Builder shall be responsible to Owner for this cost if the reason for the repairs is attributable to the Design-Builder. If payments then or thereafter due to the Design-Builder are not sufficient to cover such costs, then the Design-Builder shall pay the difference to the Owner on demand.

§ 11.2.2 After Substantial Completion

§ 11.2.2.1 In addition to the Design-Builder's obligations under Section 3.1.12, 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 Design-Build Documents, any of the Work is found not to be in accordance with the requirements of the Design-Build Documents, the Design-Builder shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Design-Builder a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the Design-Builder fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, the Owner may correct it in accordance with Section 7.9.

§ 11.2.2.2 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.

§ 11.2.2.3 The one-year period for correction of Work shall be extended by corrective Work performed by the Design-Builder pursuant to this Section 11.2 for portions of Work requiring correction.

§ 11.2.3 The Design-Builder shall remove from the site portions of the Work that are not in accordance with the requirements of the Design-Build Documents and are neither corrected by the Design-Builder nor accepted by the Owner.

§ 11.2.4 The Design-Builder shall bear the cost of correcting destroyed or damaged construction of the Owner or separate contractors, whether completed or partially completed, and furniture, fixtures, equipment, or other items placed therein (whether by Owner or any other party) that are injured or damaged, caused by the Design-Builder's correction or removal of Work that is not in accordance with the requirements of the Design-Build Documents.

§ 11.2.4.1 Where nonconforming Work is found, the entire area of Work involved shall be corrected unless the Design-Builder can completely define the limits to the Owner's satisfaction. Additional testing, sampling, or inspecting needed to define nonconforming Work shall be at the Design-Builder's sole expense, and performed by a testing laboratory designated by the Owner if such services are reasonably required by the Owner. All corrected work shall be retested at the Design-Builder's sole expense.

§ 11.2.5 Nothing contained in this Section 11.2 shall be construed to establish a period of limitation with respect to other obligations the Design-Builder has under the Design-Build Documents. Establishment of the one-year period for correction of Work as described in Section 11.2.2 relates only to the specific obligation of the Design-Builder to correct the Work, and has no relationship to the time within which the obligation to comply with the Design-Build Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Design-Builder's liability with respect to the Design-Builder's obligations other than specifically to correct the Work.

§ 11.2.6 Design-Builder shall (i) re-execute any parts of the Work that fail to conform with the requirements of the Contract that appear in the progress of the Work; (ii) remedy any defects in the Work due to faulty materials or workmanship that appear within a period of one (1) year from Substantial Completion of the Work hereunder,; and (iii) replace, repair, or restore any parts of the Project or furniture, fixtures, equipment, or other items placed therein (whether by Owner or any other party) that are injured or damaged by any such parts of the Work that do not conform to the requirements of the Contract or defects in the Work.

§ 11.2.7 The provisions of this Section 11.2 apply to Work done by Contractors of the Design-Builder as well as Work done directly by employees of the Design-Builder. The provisions of this Section 11.2.7 shall not apply to corrective work attributable solely to the acts or omissions of any separate contractor of Owner (unless Design-

Builder is acting in such capacities). The cost to Design-Builder of performing any of its obligations under this Section 11.2.7 to the extent not covered by insurance shall be borne by Design-Builder.

§ 11.2.8 If, the Owner and Design-Builder deem it inexpedient to require the correction of Work that is defective, damaged, or not done in accordance with the Contract Documents, an equitable deduction from the Contract Sum shall be made by agreement between Owner and Design-Builder. Until such settlement, Owner may withhold such reasonable sums, if any, due Design-Builder pursuant to this Agreement as Owner deems just and reasonable. The settlement shall not be unreasonably delayed by the Owner and the amount of money withheld shall be based on estimated actual cost of the correction to Owner.

11.2.9 The provisions of this Paragraph 11.2 apply to Work done by subcontractors of the Design-Builder as well as work done directly by employees of the Design-Builder.

11.2.10 Design-Builder's express obligation herein shall be in addition to, and not in lieu of, any other remedies Owner may have under this Agreement, at law, or in equity for defective Work.

§ 11.3 Acceptance of Nonconforming Work

If, however, Owner and Design-Builder deem it inexpedient to require the correction of work damaged or not done in accordance with the Design-Build Documents, an equitable deduction from the Contract Sum and the Stipulated Sum shall be made by agreement between Design-Builder and Owner. Until such settlement, Owner may withhold such sums as Owner deems just and reasonable from moneys, if any, due Design-Builder. The settlement shall not be unreasonably delayed by the Owner and the amount of money withheld shall be based on estimated actual cost of the correction to Owner.

ARTICLE 12 COPYRIGHTS AND LICENSES

§ 12.1 Drawings, specifications, and other documents furnished by the Design-Builder, including those in electronic form, are Owner's Property ("Work Product") through which the Work to be executed by Design-Builder is to be performed. The Design-Builder may retain one record set of the Work Product or additional copies as approved by the Owner in writing for the Design-Builder to perform its services under this Agreement. Neither the Design-Builder nor any design consultant or professional, other consultant, or employee of the Design-Builder shall own or claim a copyright in the Work Product, and unless otherwise indicated, the Owner will own them and have all common law, statutory, and other reserved rights, in addition to the copyright, upon creation of the Work Product. To this end, Design-Builder agrees and does hereby assign, grant, transfer, and convey to Owner, its successors and assigns, Design-Builder's entire right, title, interest and ownership in and to such Work Product, including, without limitation, the right to secure copyright registration. Design-Builder confirms that Owner shall own Design-Builder's right, title, interest in and to, including the right to use and reproduce, to perform publicly, and to display, all such Work Product, whether or not such Work Product constitutes a "Work Made for Hire" as defined in 17 U.S.C. § 201(b). All copies of Work Product, except the Design-Builder's record set, shall be returned or suitably accounted for to the Owner upon completion of the Work. The Work Product and copies thereof furnished to the Design-Builder are for use solely with respect to this Project unless approved in advance by the Owner. They are not to be used by the Design-Builder on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner. The Design-Builder is authorized to use and reproduce applicable portions of the Work Product appropriate to and for use in the execution of its services under this Agreement. All copies made under this authorization may bear the statutory copyright notice, if any, shown on the Work Product and shall be returned to Owner at the completion of the Work as set forth herein. 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 dereliction of the Owner's copyrights or other reserved rights. Except for its record set, Design-Builder shall deliver all copies of the Work Product to Owner upon the earlier to occur of the Owner's request, completion of the Work, or termination of this Agreement. In exchange for the rights granted herein, the Owner agrees not to sell the Work Product created by the Design-Builder or any design professional or consultant to any third party, but may provide a copy of the Work Product to a subsequent purchaser or transferee in connection with the sale of or transfer of title to the building or structure to which the applicable Work Product pertains. The Design-Builder, its Contractors, and material or equipment suppliers may not use the Work Product on other projects or for additions to this Project outside the scope of the Work without specific written consent of the Owner. Notwithstanding the foregoing, and intellectual property owned by the Design-Builder prior to the performance of services under this Agreement, such as standard details and specifications that are not specific to this Project or any Sub-Project, shall remain the property of the Design-Builder.

§ 12.2

The Work Product may be used as a prototype by the Owner for other facilities. The Owner may elect to use the Design-Builder to perform the site adaptation and other professional services involved in the reuse of the Work Product. If such is the case, the Design-Builder is obligated to perform the work for an additional compensation that will fairly compensate the Design-Builder only for the additional work involved. It is reasonable to expect that the fair additional compensation may be significantly less than the fee provided for under this Agreement. If the Owner elects to employ a different Design-Builder to perform the site adaptation and other professional services involved in the reuse of the Work Product, the Design-Builder shall commit its consultants to the terms of this Article. If the Owner uses the Work Product for any other project, except for any subsequent use other than with the review, adaptation administration and/or other involvement of the Design-Builder in the subsequent project, the Owner shall release the Design-Builder from any liability for any errors and omissions in connection with such subsequent use. For clarity, in addition to all rights described herein and without limitation to same, in the event of termination of this Agreement for any reason, including for convenience by Owner or for cause by Design Builder, Owner shall be permitted to utilize any Work Product prepared prior to termination in order to complete the project.

§ 12.3 [Intentionally deleted]

§ 12.3.1 [Intentionally deleted]

§ 12.3.2 [Intentionally deleted]

ARTICLE 13 TERMINATION OR SUSPENSION

§ 13.1 Termination or Suspension Prior to Execution of the Design-Build Amendment

§ 13.1.1 If the Owner fails to make payments to the Design-Builder for any undisputed amounts of Work prior to execution of the Design-Build Amendment in accordance with this Agreement, such failure shall be considered substantial nonperformance and cause for termination or, at the Design-Builder's option, cause for suspension of performance of services under this Agreement if not cured by the Owner within fifteen (15) days. If the Design-Builder elects to suspend the Work, the Design-Builder shall give seven (7) days' written notice to the Owner before suspending the Work. In the event of a suspension of the Work, the Design-Builder shall have no liability to the Owner for delay or damage caused by the suspension of the Work. Before resuming the Work, the Design-Builder shall be paid all sums due prior to suspension and any expenses incurred in the interruption and resumption of the Design-Builder's Work. The Design-Builder's compensation for, and time to complete, the remaining Work shall be equitably adjusted.

§ 13.1.2 If the Owner suspends the Project, the Design-Builder shall be compensated for any undisputed amounts of the Work reasonably and necessarily performed prior to notice of such suspension. When the Project is resumed, the Design-Builder may be compensated for direct, actual, and verifiable expenses incurred in the interruption and resumption of the Design-Builder's Work. The Design-Builder's compensation for, and time to complete, the remaining Work shall be equitably adjusted if Design-Builder is unable to make up for the time and perform its services within time period agreed upon by Owner and Design-Builder.

§ 13.1.3 If the Owner suspends the Project for more than 90 cumulative days for reasons other than the fault of the Design-Builder, the Design-Builder may terminate this Agreement by giving not less than seven days' written notice.

§ 13.1.4 Either party may terminate this Agreement upon not less than seven days' written notice should the other party fail substantially to perform in accordance with the terms of this Agreement through no fault of the party initiating the termination.

§ 13.1.5 The Owner may terminate this Agreement upon not less than seven (7) days' written notice to the Design-Builder for the Owner's convenience and without cause.

§ 13.1.6 In the event of termination not the fault of the Design-Builder, the Design-Builder shall be compensated for Work reasonably and necessarily performed prior to termination, together with Reimbursable Expenses then due that have not been reimbursed, and a $100 amount as independent consideration for the right to terminate for convenience,. In no event shall the Design-Builder's compensation under this Section 13.1.6 be greater than the compensation set forth in Section 2.1. Such compensation shall include profit only on work performed prior to

termination.

§ 13.2 Termination or Suspension Following Execution of the Design-Build Amendment
§ 13.2.1 Termination by the Design-Builder
§ 13.2.1.1 The Design-Builder may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Design-Builder, the Architect, a Consultant, or a Contractor, or their agents or employees, or any other persons or entities performing portions of the Work under direct or indirect contract with the Design-Builder, 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 Owner has not issued a Certificate for Payment and has not notified the Design-Builder of the reason for withholding certification as provided in Section 9.5.1, or because the Owner has not made payment for undisputed amounts on a Certificate for Payment within the time stated in the Design-Build Documents; or

§ 13.2.1.2 The Design-Builder may terminate the Contract if, through no act or fault of the Design-Builder, the Architect, a Consultant, a Contractor, or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Design-Builder, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 13.2.3 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.

§ 13.2.1.3 If one of the reasons described in Section 13.2.1.1 or 13.2.1.2 exists, the Design-Builder may, upon seven (7) days' written notice to the Owner, terminate the Contract and recover from the Owner payment for any undisputed amounts of Work performed prior to termination.

§ 13.2.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Design-Builder or any other persons or entities performing portions of the Work under contract with the Design-Builder because the Owner has repeatedly failed to fulfill the Owner's obligations under the Design-Build Documents with respect to matters important to the progress of the Work, the Design-Builder may, upon seven (7) additional days' written notice to the Owner, terminate the Contract and recover from the Owner as provided in Section 13.2.1.3.

§ 13.2.2 Termination by the Owner For Cause
§ 13.2.2.1 The Owner may terminate the Contract if the Design-Builder

.1 fails to submit the Proposal by the date required by this Agreement, or if no date is indicated, within a reasonable time consistent with the date of Substantial Completion;

.2 refuses or fails to supply an Architect, or enough properly skilled Consultants, Contractors, or workers or proper materials;

.3 fails to make payment to the Architect, Consultants, or Contractors for services, materials or labor in accordance with their respective agreements with the Design-Builder;

.4 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;

.5 is otherwise guilty of substantial breach of a provision of the Design-Build Documents;

.6 fails to furnish the Owner, upon written request, with assurances satisfactory to the Owner, evidencing the Design-Builder's ability to complete the Work in compliance with all the requirements of the Contract Documents;

.7 engages in serious or repeated worker misconduct;

.8 engages in conduct that would constitute a violation of state or federal criminal law, including but not limited to, the laws prohibiting certain gifts to public servants, or engages in conduct that would constitute a violation of the Owner's ethics or conflict of interest policies; or

.9 fails to proceed continuously and diligently with the construction and completion of the Work, except as permitted under the Contract Documents

§ 13.2.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner and after giving the Design-Builder and the Design-Builder's surety, if any, seven (7) days' written notice, terminate employment of the Design-Builder and may, subject to any prior rights of the surety:

.1 Exclude the Design-Builder from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Design-Builder;

.2 Accept assignment of the Architect, Consultant and Contractor agreements pursuant to Section 3.1.15; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient.

In any such event, title to the Work and any products thereof, whether completed or partially completed, as well as all materials prepared, procured or set aside by the Design-Builder for use in the Work, shall vest in the Owner at the Owner's option, and the Owner may enter the Design-Builder's premises and remove the same therefrom. No election hereunder shall be construed as a waiver of any rights or remedies of the Owner with regard to any breach of the Design-Build Documents.

§ 13.2.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 13.2.2.1, the Design-Builder shall not be entitled to receive further payment until the Work is finished. Any further payment shall be limited to amounts earned to the date of termination.

§ 13.2.2.4 If the costs of finishing the Work, including compensation for an architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, exceed the unpaid balance of the Contract Sum, then the Design-Builder and/or its Surety shall pay the difference to the Owner. The obligation for payment shall survive termination of the Contract.

13.2.2.5 The parties hereby agree that: 1) if an order for relief is entered on behalf of the Design-Builder, pursuant to Chapter 11 of the U.S. Bankruptcy Code; 2) if any other similar order is entered under any debtor relief laws; 3) if Design-Builder makes assignments for the benefit of one or more of its creditors; 4) if a receiver is appointed for the benefit of its creditors; or 5) if a receiver is appointed on account of its insolvency, any such event could impair or frustrate Design-Builder's performance of the Contract Documents. Accordingly, it is agreed that upon occurrence of any such event, Owner shall be entitled to request of Design-Builder or its successor in interest, adequate assurance of future performance in accordance with the terms and conditions of the Contract Documents. Failure to comply with such request within ten (10) days of delivery of the request shall entitle Owner to terminate the Contract and to the accompanying rights set forth in Subparagraphs 14.2.1 through 14.2.6. In all events, pending receipt of adequate assurance of performance and actual performance in accordance with the Contract Documents, Owner shall be entitled to proceed with the Work with Owner's own forces or with other Contractors on a time and material or other appropriate basis, the cost of which will be charged against the Contract Sum.

13.2.2.6 As required by Texas Government Code Chapter 2253, if a Performance Bond has been furnished and the Design-Builder is declared by the Owner to be in default under the Contract, then the Surety shall promptly perform the Work, in full accordance with the plans, specifications, and Contract Documents. Unless otherwise agreed in writing between the Surety and the Owner, the Surety shall complete the Work by the Surety entering into a Contract acceptable to Owner, with a Design-Builder acceptable to Owners, and shall obtain new Payment and Performance Bonds as required by law.

§ 13.2.3 Suspension by the Owner for Convenience

§ 13.2.3.1 The Owner may, without cause, order the Design-Builder in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine. Furthermore, if this Contract is a multi-year contract funded through Owner's current general funds that are not bond funds, then the Owner's Board of Trustees has the right to not appropriate adequate monies for the next fiscal year and to terminate this Contract at the end of each fiscal year during the term of the Contract, without the Owner incurring any further liability to Design-Builder as a result of such termination.

§ 13.2.3.2 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 13.2.3.1. 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 Design-Builder is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 13.2.4 Termination by the Owner for Convenience

§ 13.2.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. Furthermore, if this Contract is a multi-year contract funded through Owner's current general funds that are not bond funds, then the Owner's Board of Trustees has the right to not appropriate adequate monies for the next fiscal year and to terminate this Contract at the end of each fiscal year during the term of the Contract, without the Owner incurring any further liability to Design-Builder as a result of such termination.

§ 13.2.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Design-Builder 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 Project agreements, including agreements with the Architect, Consultants, Contractors, and purchase orders, and enter into no further Project agreements and purchase orders.

§ 13.2.4.3 In case of such termination for the Owner's convenience, the Design-Builder shall be entitled to receive payment for undisputed amounts of Work executed, reasonable costs of demobilization, and costs incurred by reason of such termination.

ARTICLE 14 CLAIMS AND DISPUTE RESOLUTION

§ 14.1 Claims

§ 14.1.1 Definition. A Claim is a demand or assertion by the Design-Builder seeking, as a matter of right, payment of additional compensation under the Contract Documents, interpretation of the Contract Document terms, a change in the Contract Time; or other relief with respect to the terms of the Contract. The responsibility to substantiate Claims shall rest with the Design-Builder. This Section 14.1.1 does not require the Owner to file a Claim in order to impose liquidated damages or pursue any relief at law or in equity.

§ 14.1.2 Time Limits on Litigation. The Owner and Design-Builder 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 binding dispute resolution method selected in Section 1.3, within the time period specified by applicable law, but in any case not more than 12 years after the date of Final Completion of the Work. The Owner and Design-Builder waive all claims and causes of action not commenced in accordance with this Section 14.1.2. Notwithstanding any provision contained herein, nothing in this Agreement shall be deemed to waive any immunity of either of the parties at law or in equity.

§ 14.1.3 Notice of Claims by Design-Builder

§ 14.1.3.1 Claims by the Design-Builder, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work, shall be initiated by written notice to the Owner. Claims by Design-Builder under this Section 14.1.3.1 must be initiated within 21 calendar days after occurrence of the event giving rise to such Claim or within 21 calendar days after the Design-Builder first knew or should have known the condition giving rise to the Claim, whichever is earlier. Claims must be initiated by written notice titled: "Notice of Claim" ("Notice") and sent to Owner's Architect. The Notice shall clearly set out the specific matter of complaint, and the impact which may occur or have occurred as result thereof, to the extent that the impact can be assessed at the time of the Notice. If the impact cannot be assessed as of the date of the Notice, then the Notice shall be amended at the earliest date that is reasonably possible. It is imperative that Owner receive timely specific Notice of any potential problem identified by Design-Builder in order that the problem can be mitigated or resolved promptly. Claims not filed as required by this Section shall be waived.

§ 14.1.3.2 Claims by the Design-Builder, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work, shall be initiated by written notice to the other party.

§ 14.1.3.3 When Owner has an applicable claim for construction defects, Owner shall comply with the provisions of Texas Government Code Chapter 2272 related to the provision of notice of defects and the Design-Builder's opportunity to cure.

§ 14.1.4 Continuing Contract Performance. After receipt of a Notice of Claim, the Owner's Architect shall have fourteen (14) calendar days to render a decision, which shall be stated in writing and delivered to the Contractor and the Owner via facsimile, regular mail, electronic mail or hand delivery. If the Owner's Architect fails to render a decision in writing with the fourteen (14) days, the Claim shall be deemed accepted. Within five (5) calendar days of receipt of the Owner's Architect's written decision, Contractor may file a written appeal of the decision to the Deputy Chief of Operations. Within fourteen (14) calendar days of the receipt of an appeal, an Appeals Board consisting of the Deputy Chief of Operations, the Director of Design & Special Projects, and a representative of the offices of Legal Services shall render a written decision. Any Claim determination requiring a Change Order must be approved by the Board of Trustees. The filing, or rejection of a Claim does not entitle Contractor to stop performance of the Work. The Contractor shall proceed diligently with performance of the Contract during the pendency of any Claim, excepting termination or under Owner's direction to stop the Work. Any Claim that would require expenditure in excess of $10,000.00, or that would require a Change Order, must be reviewed by the Owner's Architect and the Appeals Board using the appeals process described in this section. Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 13, the Design-Builder shall proceed diligently with performance of the Contract and the Owner shall continue to make undisputed payments in accordance with the Design-Build Documents. Notwithstanding the forgoing, if the Owner's Architect or the Appeals Board need additional time to consider supporting data or other information requested from Design-Builder, the preceding deadlines for the Owner's Architect or the Appeals Board to render decisions may be adjusted appropriately.

§ 14.1.5 Claims for Additional Cost or an Increase in the Contract Sum

If the Design-Builder wishes to make a Claim for additional cost or an increase in the Contract Sum, written notice as provided in Section 14.1.3 shall be given to Owner . Prior notice is not required for Claims relating to an emergency endangering life or property. The Owner will promptly investigate such Claim and report findings and a recommended resolution, in writing, to the Owner and Design-Builder. If the Claim is approved by Owner's Board of Trustees, or Owner's representative, if provided for herein, then Design-Builder shall proceed with the execution of the Work that is the subject matter of the Claim. If the Claims is rejected by the Owner, then Design-Builder may pursue alternative dispute resolution as provided for in the Contract Documents.

§ 14.1.6 Claims for Additional Time

§ 14.1.6.1 If the Design-Builder intends to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Design-Builder'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.

§ 14.1.6.2 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.

§ 14.1.7 Claims for Consequential Damages

The Design-Builder waives Claims for consequential damages arising out of or relating to this Contract. This waiver includes damages incurred by the Design-Builder 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 waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 13. Nothing contained in this Section 14.1.7 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Design-Build Documents.

§ 14.2 Intentionally deleted.

§ 14.2.2 Procedure

§ 14.2.2.1 Intentionally deleted.

§ 14.2.2.2 Claims Initiated by the Design-Builder. Intentionally deleted.

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

§ 14.2.4 If the Owner requests the Design-Builder to provide a response to a Claim or to furnish additional supporting data, information or documents, the Design-Builder shall respond, within ten (10) days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Owner when the response or supporting data will be furnished or (3) advise the Owner that no supporting data will be furnished.

§ 14.2.5 Decisions by the Owner's Architect or the Appeals Board shall (1) be in writing; (2) state the reasons therefor; and (3) identify any change in the Contract Time. The Appeal Board's 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, which dispute resolution shall be through litigation.

§ 14.2.6 Intentionally deleted.

§ 14.2.6.1 Intentionally deleted.

§ 14.2.7 Intentionally deleted.

§ 14.2.8 Intentionally deleted.

§ 14.3 Mediation

§ 14.3.1 The parties shall attempt to mediate any claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived Design-Builder as provided for in Sections 9.10.5, and this Article 14.

§ 14.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by a mutually agreeable mediator. 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.

§ 14.3.3 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.

§ 14.4 Arbitration

§ 14.4.1 Notwithstanding anything to the contrary in the Contract Documents or in any document forming a part hereof, there shall be no mandatory arbitration for any dispute arising hereunder.

§ 14.4.1.1 [Intentionally deleted]

§ 14.4.2 [Intentionally deleted]

§ 14.4.3 [Intentionally deleted]

§ 14.4.4 Consolidation or Joinder

§ 14.4.4.1 [Intentionally deleted]

§ 14.4.4.2 [Intentionally deleted]

§ 14.4.4.3 [Intentionally deleted]

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Governing Law

The Contract shall be governed by the law of the state of Texas, without regard for any of its conflict of law provisions. In the event litigation is filed, the parties agree that the exclusive and mandatory venue for any such litigation shall be in a court of competent jurisdiction in Galveston County, Texas. As a material consideration of the making of this Contract, this Contract and the modifications to this Contract shall not be construed against the maker of said Contract and modifications.

§ 15.2 Successors and Assigns

§ 15.2.1 The Owner and Design-Builder, respectively, bind themselves, their partners, successors, assigns and legal representatives to the covenants, agreements and obligations contained in the Design-Build Documents. Except as provided in Section 15.2.2, 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.

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

§ 15.2.3 If the Owner requests the Design-Builder, Architect, Consultants, or Contractors to execute certificates, other than those required by Section 3.1.10, the Owner shall submit the proposed language of such certificates for review at least 14 days prior to the requested dates of execution or within such time period as is reasonably practical, whichever is later. If the Owner requests the Design-Builder, Architect, Consultants, or Contractors to execute consents reasonably required to facilitate assignment to a lender, the Design-Builder, Architect, Consultants, or Contractors shall execute all such consents that are consistent with this Agreement, provided the proposed consent is submitted to them for review at least 14 days prior to execution. The Design-Builder, Architect, Consultants, and Contractors shall not be required to execute certificates or consents that would require knowledge, services or responsibilities beyond the scope of their services.

§ 15.3 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; 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, or if sent by electronic facsimile transmission, to the last business number known to the party giving notice, with electronic confirmation of receipt; or, if sent by electronic mail, to the email address of the Owner's or Design-Builder's designated representative, with electronic confirmation of receipt.

§ 15.4 Rights and Remedies

§ 15.4.1 Duties and obligations imposed by the Design-Build 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.

§ 15.4.2 No action or failure to act by the Owner or Design-Builder 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 thereunder, except as may be specifically agreed in writing.

§ 15.5 Tests and Inspections

§ 15.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Design-Build Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Design-Builder shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity provided by the Owner, or with the appropriate public authority, however, per Texas Government Code Chapter 2269, Owner shall bear all costs of construction materials engineering, testing, and inspection services, and the verification testing services necessary for acceptance of the facility by the Owner 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 Design-Builder shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures.

§ 15.5.2 If the Owner, or public Authorities Having Jurisdiction determines that portions of the Work require additional testing, inspection or approval not included under Section 15.5.1, the Owner will instruct the Design-Builder to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Design-Builder shall give timely notice to the Owner of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Such costs, except as provided in Section 15.5.3, shall be at the Owner's expense.

§ 15.5.3 If such procedures for testing, inspection or approval under Sections 15.5.1 and 15.5.2 reveal failure of the portions of the Work to comply with requirements established by the Design-Build Documents, all costs made necessary by such failure shall be at the Design-Builder's expense.

§ 15.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Design-Build Documents, be secured by the Design-Builder and promptly delivered to the Owner.

§ 15.5.5 If the Owner is to observe tests, inspections or approvals required by the Design-Build Documents, the Owner will do so promptly and, where practicable, at the normal place of testing.

§ 15.5.6 Tests or inspections conducted pursuant to the Design-Build Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 15.6 Confidential Information

If the Owner or Design-Builder transmits Confidential Information, the transmission of such Confidential Information constitutes a warranty to the party receiving such Confidential Information that the transmitting party is authorized to transmit the Confidential Information. If a party receives Confidential Information, the receiving party shall keep the Confidential Information strictly confidential and shall not disclose it to any other person or entity except as set forth in Section 15.6.1.

§ 15.6.1 A party receiving Confidential Information may disclose the Confidential Information as required by law or court order, including a subpoena or other form of compulsory legal process issued by a court or governmental entity. A party receiving Confidential Information may also disclose the Confidential Information to its employees, consultants or contractors in order to perform services or work solely and exclusively for the Project, provided those employees, consultants and contractors are subject to the restrictions on the disclosure and use of Confidential Information as set forth in this Contract. Further, the parties recognize that Owner, as a Texas governmental entity, is subject to the Texas Public Information Act, and, as such, shall disclose documents as required under such law or as required by the Texas Attorney General, a court of competent jurisdiction, or another agency of competent jurisdiction, provided that prior to making any such disclosure, Owner shall notify Design-Builder so that Design-Builder can seek any appropriate legal or equitable relief to prevent such disclosure.

§ 15.7 Capitalization

Terms capitalized in the Contract 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.

§ 15.8 Interpretation

§ 15.8.1 In the interest of brevity the Design-Build 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.

§ 15.8.2 Unless otherwise stated in the Design-Build Documents, words which have well-known technical or construction industry meanings are used in the Design-Build Documents in accordance with such recognized meanings.

§ 15.9 Other Provisions:

§ 15.9.1 The Design-Builder represents and warrants the following to the Owner (in addition to the other representations and warranties contained in the Contract Documents), as an inducement to the Owner to execute this Contract, which representations and warranties shall survive the execution and delivery of the Contract and the Final Completion of the Work:

.1 that it is financially solvent, able to pay its debts as they mature, and possessed of sufficient working capital to complete the Work and perform its obligations under the Contract Documents;

.2 that it is able to furnish the tools, materials, supplies, equipment, and labor required to timely complete the Work and perform its obligation hereunder and has sufficient experience and competence to do so;

.3 that it is authorized to do business in the State where the Project is located and properly licensed by all necessary governmental, public, and quasi-public authorities having jurisdiction over it, the Work, or the site of the Project; and

.4 that the execution of the Contract and its performance thereof are within its duly-authorized powers.

§ 15.9.2 Wage Rates – Prevailing: In compliance with applicable laws of the State of Texas, Chapter 2258 of the Texas Government Code, the building construction wage rates adopted by the District are designated by the Owner for the classifications listed, and listed as an Exhibit to this Agreement. The Design Builder and each Contractor shall pay to all laborers, workers, and mechanics employed by them in the execution of this Contract not less than such rates for each craft or type of workers or mechanic needed to execute the Contract. If it becomes necessary to employ any person in a trade or occupation not herein listed, such person shall be paid not less than an hourly rate fairly comparable to the rates shown hereinafter. Owner shall withhold from payments to Design Builder any amounts as required by Chapter 2258.051 of the Texas Government Code for violations of this provision.

§ 15.9.3 Liquidated Damages: The parties hereto agree that time is of the essence in all phases of the Work under this Contract and that the pecuniary damages which would be suffered by the Owner, if the Design Builder does not substantially complete all work called for in this Agreement by the date specified in this Agreement, 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 Design Builder a sum equal to the amounts listed below for each phase of work:

Liquidated Damages for the Project shall be established as $2,000 per day for each and every calendar day (including Saturdays, Sundays, and holidays) that the work is not Substantially Complete beyond the Substantial Completion Date and $2,000 per day for each and every calendar day (including Saturdays, Sundays, and holidays) that the work is not Finally Complete beyond the Final Completion Date. In the event the Design-Builder fails to attain Substantial Completion prior to the Final Completion date, the daily amount for Liquidated Damages for Substantial Completion and Final Completion will be added together.

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 substantially 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, inconvenience, disruption of the educational environment, moving costs, loss of use, and other miscellaneous increased costs, all of which are difficult of exact ascertainment.

§ 15.9.4 The Architect designated in Article 1.2.2 shall, as requested by Owner, be provided copies and/or access to all documents, submittals, Work Product and other materials to be provided to Owner under this Agreement in accordance with the same timelines established for provision to Owner, and, as requested by Owner, shall have all such access and similar rights to inspect the Work and site as are granted to Owner under this Agreement and at law. Owner shall receive such advice and consultation from said Architect as is required by Tex. Gov't Code 2269 and as deemed appropriate by Owner in relation to the Project. Design-Builder shall timely respond to and provide such access in a prompt manner as requested by Owner during the course of the Project.

§ 15.9.5 Design-Builder shall require all construction workers, whether Design-Builder's own forces, or the forces of Design-Builder's Contractors, to wear identification tags on the front of their persons during all times that they are on Owner's property. Such identification tags shall have identification of the construction worker by number or other identifying medium in a typeface large enough to be seen from eight feet away if requested to do so.

§ 15.9.6 Design-Builder shall require all construction workers, whether Design-Builder's own forces or the forces of Design-Builder's Contractors, to park their personal motor vehicles on Owner's property only in the parking places designated by the Owner. Any vehicles not parked in the appropriate locations shall be towed at the vehicle owner's sole expense.

§15.9.7 Design-Builder shall follow, and shall require all employees, agents or Contractors to follow, the tree ordinance of the municipality in which the Project is located. In addition, if not covered by the municipal tree

ordinance, Design-Builder shall barricade and protect all trees on the Project, which shall be included in the Cost of the Work.

§ 15.9.8 Design-Builder shall institute a theft deterrent program designed to restrict construction worker access to properties of Owner that are currently in use, to maintain supervision of Design-Builder's and Design-Builder's Contractor's forces, and to reimburse those suffering a theft loss which results from Design-Builder's forces or Design-Builder's Contractor's forces, as charged and determined by the local authorities having jurisdiction.

§ 15.9.9 In additional to other requirements herein, Design-Builder shall provide Owner with one sepia set and one electronic copy of final marked-up "as built" drawings of each job site in the Project or by such other means as authorized in writing by Owner.

§ 15.9.10 All sums due hereunder are payable in the county of the Owner's central offices.

§ 15.9.11 This Agreement, in its entirety, shall be binding upon all the parties hereto, their respective successors, heirs, executors, administrators or assigns.

§ 15.9.12 Execution of this Agreement shall constitute approval and acceptance of all terms, covenants and conditions as modified and contained in the Contract Documents.

§ 15.9.13 By signing this Agreement, the undersigned certifies as follows: "Under Section 231.006, Texas Family Code, the vendor or applicant certifies that the individual or business entity named in the contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated, and payment may be withheld if this certification is inaccurate.

§ 15.9.14 No delay or omission by Owner in exercising any right or power accruing upon the noncompliance or failure of performance by the Design-Builder of any of the provisions of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver of any breach by either of the parties of any covenant, condition or agreement shall not be construed to be a waiver of any subsequent breach thereof or of any other covenant, condition or agreement herein contained.

§ 15.9.15 Design-Builder stipulates that Owner is a political subdivision of the State of Texas, and, as such, may enjoy immunities from suit and liability under the Constitution and laws of the State of Texas. By entering into this Agreement, Owner does not waive any of its immunities from suit and/or liability, except as otherwise specifically provided herein and as specifically authorized by law.

§ 15.9.16 This Agreement is subject to all applicable federal and state laws, rules, and regulations. Invalidity of any portion of this Agreement under the laws of the State of Texas or of the United States shall not affect the validity of the remainder of this Agreement. Governing law and venue shall be as specified in the General Conditions of the Contract.

§ 15.9.17 The Contract is entered into by and between the Owner and Design-Builder and for their benefit. There is no intent by the either the Owner or the Design-Builder to create or establish third party beneficiary status or rights in any third party and no such third party shall have any right to enforce any right or enjoy any benefit created or established under the Contract.

§ 15.9.18 To the extent permitted by law, the Design-Builder shall obtain state criminal history record information on all Design-Builder's employees who perform Work at the site or otherwise are present on Owner's property and shall cause all Contractors to obtain state criminal history record information on all its employees who perform Work at the site or otherwise are present on Owner's property. Additionally, to the extent permitted by law, for those employees of the Design-Builder and/or Contractors who having continuing duties on the Project and have or will have direct contact with students, if any, the Design-Builder must obtain and will cause the Contractors to obtain state and national criminal history records, including fingerprinting, ("CHRI") in accordance with Section 22.0834 of the Texas Education Code. The Owner will be the final arbiter of what constitutes continuing duties or direct contact with students. State and national CHRI must be obtained through the Texas Department of Public Safety (DPS) criminal history clearinghouse (Fingerprint-based Applicant Clearinghouse of Texas – FACT). The Design-Builder will provide and will cause each Contractor to provide all necessary identifying information (full legal name, driver's license number or birth date) and documentary evidence of having obtained CHRI for covered employees,

including completed and signed certifications, to the Owner, subject to any confidentiality requirements imposed by applicable law, within five (5) working days of the later of the execution of this Agreement or after the first day of work for any covered employee. All expenses related to obtaining CHRI and/or fingerprinting services shall be paid by the Design-Builder. No person who has a conviction or a misdemeanor involving a crime of moral turpitude or any felony may be present on the Owner's property or be engaged in performing Work on the Project. In the event the Owner determines in its sole discretion to conduct the Owner's own CHRI background checks, Design-Builder shall fully cooperate and cause all of its employees to provide any fingerprinting or other information necessitated by Owner. Design Builder shall further cause its Contractor(s), Architect, Consultant(s) and any subcontractors or subconsultants to fully cooperate with the Owner in the same manner. Owner shall be entitled to reimbursement of any costs incurred in performing such checks.

15.9.18.1 Pursuant to Texas Education Code § 44.034, Design-Builder must give advance written notice to the Owner if the Design-Builder or an owner or operator of the Design-Builder has been convicted of a felony. The Owner may terminate this Agreement if the Owner determines that the Design-Builder failed to give such notice or misrepresented the conduct resulting in the conviction. This paragraph requiring advance notice does not apply to a publicly-held corporation.

15.9.19 It is understood and agreed that the relationship of Design-Builder to Owner shall be that of an independent contractor. Nothing contained in this Agreement or inferable from this Agreement shall be deemed or construed to: 1) make Design-Builder the agent, servant or employee of the Owner; or 2) create any partnership, joint venture, or other association between Owner and Design-Builder. Any direction or instruction by Owner or any of its authorized representatives in respect of the Work, shall relate to the result the Owner desires to obtain from the Work, and shall in no way affect Design-Builder's independent contractor status.

15.9.20 Pursuant to Texas Labor Code § 214.008, the Design-Builder and any subcontractor on the Project, shall properly classify, as an employee or an independent contractor, in accordance with Texas Labor Code Chapter 201, any individual the Design-Builder or subcontractor directly retains and compensates for services performed in connection with this Agreement. Any Design-Builder or subcontractor who fails to properly classify such an individual, may be subject to penalties of Texas Labor Code § 214.008(c).

15.9.21 ANTITRUST VIOLATION. To permit the Owner to recover damages suffered in antitrust violations, Design-Builder hereby assigns to Owner any and all claims for overcharges associated with this Contract which violate the antitrust laws of the United States, 15 U.S.C.A. Section 1 *et seq*. The Design-Builder shall include this provision in its agreements with each subcontractor and supplier. Each subcontractor shall include such provisions in agreements with sub-subcontractors and suppliers.

15.9.22 EQUAL OPPORTUNITY IN EMPLOYMENT

15.9.22.1 The Design-Builder and the Design-Builder's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, age, disability, sex, national origin, or any class otherwise protected by District policy or law. The Design-Builder agrees to post in conspicuous places, available to employees and applicants, notices setting forth the Design-Builder's nondiscrimination policies.

15.9.23.2 The Design-Builder and the Design-Builder's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, age, disability, sex, national origin, or any class otherwise protected by District policy or law.

15.9.24 RECORDS

15.9.24.1 Design-Builder shall at all times through the date of Final Completion, maintain Job Records, including, but not limited to, invoices, Construction Documents, payment records, payroll records, daily reports (including photos, on Owner's Project Management software), diaries, logs, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda, other financial data and job meeting minutes applicable to the Project, in a manner which maintains the integrity of the documents. Job Records must be retained by Design-Builder for a least twelve (12) years, after the date of Final Completion of the Project. Within ten (10) days of Owner's request, Design-Builder shall make such Job Records available for inspection, copying, and auditing by the Owner, Architect, or other respective representatives, at Owner's central office.

15.9.24.2 Intentionally deleted.

15.9.24.3 Design-Builder shall keep a full and detailed financial accounting system and shall exercise such controls as may be necessary for property financial management under this Contract; the accounting and control systems shall be satisfactory to the Owner.

15.9.24.4 Design-Builder shall keep all Contract Documents related to the Project, provided, however, Design-Builder shall not destroy said documents until Design-Builder has confirmed with Owner in writing, that Owner has obtained a copy of all as-built drawings.

15.9.24.5 In the event that an audit by the Owner reveals any errors/overpayments by the Owner, then the Design-Builder shall refund to the Owner the full amount of such overpayments within thirty (30) days of such audit findings, or the Owner, at its option, reserves the right to deduct such amounts owed to the Owner from any payments due to the Design-Builder.

15.9.25 PROPRIETARY INTERESTS AND CONFIDENTIAL INFORMATION

15.9.25.1 Design-Builder shall not use the image or likeness of Owner's Project or Owner's official logo or emblem and any other trademark, service mark, or copyrighted or otherwise protected information of Owner, without Owner's prior written consent. Design-Builder shall not have any authority to advertise or claim that Owner endorses Design-Builder's services, without Owner's prior written consent.

15.9.25.2 Design-Builder shall not disclose any confidential information of Owner which comes into the possession of Design-Builder at any time during the Project, including but not limited to: pending real estate purchases, exchange, lease, or value; information related to litigation; the location and employment of security devices, security access codes; student likenesses; student record information; employee information; or any other information deemed confidential by law.

15.9.25.3 The parties acknowledge that, as a public entity in the State of Texas, Owner is subject to, and must comply with, the provisions of the Texas Public Information Act, Texas Government Code Section 552.001, *et seq*., and the Texas Open Meetings Act, Texas Government Code, Section 551.001. *et seq.*

15.9.26 ISRAEL/TERRORIST ORGANIZATIONS/OTHER NON-BOYCOTTING AND/OR DISCRIMINATION REQUIREMENTS

15.9.26.1 Pursuant to Texas Government Code, Chapter 2270, as amended, if Design-Builder is a for-profit organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company, or affiliate of those entities or business associations (specifically excluding sole proprietorships) that exists to make a profit which has ten (10) or more full-time employees and the value of the contract with Owner is $100,000 or more, the Design-Builder represents and warrants to the Owner that the Design-Builder does not boycott Israel and will not boycott Israel during the term of this Agreement.

15.9.26.2 Design-Builder certifies that it is not a company identified by the Texas Comptroller as a company known to have contracts with or provide supplies or services to a foreign terrorist organization.

15.9.26.3 The Design-Builder represents and warrants to the Owner that the Design-Builder does not boycott energy companies as contemplated by Chapter 809 of the Government Code and will not boycott energy companies during the term of this Agreement.

15.9.26.4 The Design-Builder represents and warrants to the Owner that the Design-Builder does not discriminate against firearm and ammunition companies and trade associations as contemplated by Chapter 2274 of the Government Code and will not so discriminate during the term of this Agreement.

ARTICLE 16 INSURANCE AND BONDS

The Design-Builder shall purchase and maintain insurance and provide bonds in the amount set forth in Exhibit C to this Contract.

§ 16.1.1 The Owner requires the Design-Builder to furnish payment and performance 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 in a total amount equal to

100% of the Contract Sum and in conformity with applicable law. All bonds shall be issued by a surety company licensed, listed, and authorized to issue bonds in the State of Texas by the Texas Department of Insurance. The surety company may be required by the Owner to have a rating of not less than "B" in the latest edition of Best's Insurance Reports, Property-Casualty. The surety company shall provide, if requested, information on bonding capacity, other projects under coverage and shall provide proof to establish adequate financial capacity for the Project. Should the bond amount be in excess of ten percent (10%) of the surety company's capital and surplus, the surety company issuing the bond shall certify that the surety company has acquired reinsurance, in a form and amount acceptable to the Owner, to reinsure the portion of the risk that exceeds ten percent (10%) of the surety company's capital and surplus with one or more reinsurers who are duly authorized and admitted to do business in Texas and that amount reinsured by a reinsurer does not exceed ten percent (10%) of the reinsurers capital and surplus.

§ 16.1.2 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 Design-Builder shall promptly furnish a copy of the bonds or shall permit a copy to be made.

§ 16.1.3 The Design-Builder shall deliver the required Bonds to the Owner not later than the date of the preconstruction meeting if the Contract has been executed by Owner. All Bonds will be reviewed by the Owner for compliance with the Contract Documents prior to the execution of the Contract.

§ 16.1.4 All bonds shall be originals. The Design-Builder shall require the attorney in fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney. The name, address, and telephone number of a contact person for the Bonding Company shall be provided.

§ 16.1.5 Bonds shall guarantee the faithful performance of all the covenants, stipulations, and agreements of the Contract. Bonds shall be signed by an agent resident in the State of Texas and date of bond shall be the date of execution of the Contract. If at any time during the continuance of the Contract, the surety of the Design-Builder's bonds becomes insufficient, the Owner shall have the right to require additional and sufficient sureties which the Design-Builder shall furnish to the satisfaction of the Owner within ten (10) days after notice to do so. In default thereof, all payment or money due to the Design-Builder may be withheld until Design-Builder provides additional surety.

§ 16.1.6 It is distinctly understood that no mechanic, contractor, Design-Builder, materialman, vendor, artisan or laborer, skilled or unskilled, shall have, claim or acquire any lien upon the Project or any of the improvements in the Project, nor upon any of the land upon which the Project is located.

16.1.7 Design-Builder, as a material condition of this Agreement, shall agree to participate in any owner controlled insurance program and/or owner self-funded risk management program, including without limitation any Owner self-funded subcontractor default insurance ("SDI") program. In the even Owner elects to exercise its option to utilize any such owner controlled or funded programs, the parties may agree upon any discounts or adjustments that shall be made to the Contract Sum based on Design-Builder's participation.

ARTICLE 17 TEXAS GOVERNMENT CODE 552, SUBCHAPTER J

17.1 Pursuant to Texas Government Code 552, Subchapter J, the Design-Builder agrees to be bound by the following terms if the Contract has a stated expenditure of at least $1,000,000 for the purchase of goods or services by the District or if the Contract results in the expenditure of at least $1,000,000 in public funds for the purchase of goods or services by the District in a fiscal year of the District. If the District receives a written request for public information related to this Contract that is in the possession or custody of the Design-Builder and not in the possession or custody of the District, the District shall send, not later than the third business day after the date the District receives the written request, a written request to the Design-Builder that Design-Builder provide that information to the District.

17.2 The Design-Builder must:

.1 Preserve all contracting information related to the Contract as provided by the records retention requirements applicable to the District for the duration of the Contract;

.2 Promptly, within four business days, provide to the District any requested contracting information that is in the custody or possession of the Design-Builder upon request of the District; and,

.3 On completion of the Design-Builder, either:

.1 Provide to the District at no cost all contracting information related to the Contract that is in the custody or possession of the Design-Builder; or

.2 Preserve the contracting information related to the Contract as provided by the records retention requirements applicable to the District.

.4 The requirements of Subchapter J, Chapter 552, Government Code may apply to this Contract, and the Design-Builder agrees that the contract can be terminated if the Design-Builder knowingly or intentionally fails to comply with the requirements of that subchapter.

.5 Further, under Texas Government Code Chapter 552.372(c), the District may not accept a bid for or awarding of a contract to an entity that the District has determined has knowingly or intentionally failed in a previous bid or contract to comply with Subchapter J, unless the District determines and documents that the entity has taken adequate steps to ensure future compliance.

.6 If a Design-Builder fails to provide to the District the requested information, Texas Government Code Chapter 552.373 requires the District to notify the Design-Builder in writing of the failure and allow 10 business days to cure the violation. District may terminate the Contract if Design-Builder fails to remedy the failure, District determines the failure was knowing and intentional, and steps have not been taken to ensure future compliance.

This Agreement entered into as of the day and year first written above.

OWNER	**DESIGN-BUILDER**
GALVESTON INDEPENDENT SCHOOL DISTRICT	
By: _____ *(Signature)*	**By:** _____ *(Signature)*
[]	Title:

DRAFT

AIA® Document A141™ – 2014 Exhibit A

Design–Build Amendment

This Amendment is incorporated into the accompanying AIA Document A141™–2014, Standard Form of Agreement Between Owner and Design-Builder dated the « » day of « » in the year « » (the "Agreement")
(In words, indicate day, month and year.)

for the following PROJECT:
(Name and location or address)

« »
« »

THE OWNER:
(Name, legal status and address)

« »« »
« »

THE DESIGN-BUILDER:
(Name, legal status and address)

« »« »
« »

The Owner and Design-Builder hereby amend the Agreement as follows.

TABLE OF ARTICLES

ARTICLE A.1 CONTRACT SUM

§ A.1.1 The Owner shall pay the Design-Builder the Contract Sum in current funds for the Design-Builder's performance of the Contract after the execution of this Amendment. The Contract Sum shall be one of the following and shall not include compensation the Owner paid the Design-Builder for Work performed prior to execution of this Amendment:
(Check the appropriate box.)

[« »] Stipulated Sum, in accordance with Section A.1.2 below

[« »] Cost of the Work plus the Design-Builder's Fee, in accordance with Section A.1.3 below

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.

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

Consultation with an attorney is also encouraged with respect to professional licensing requirements in the jurisdiction where the Project is located.

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[«X »] Cost of the Work plus the Design-Builder's Fee with a Guaranteed Maximum Price, in accordance with Section A.1.4 below

§ A.1.4 Cost of the Work Plus Design-Builder's Fee With a Guaranteed Maximum Price

§ A.1.4.1 The Cost of the Work is as defined in Article A.5, Cost of the Work.

§ A.1.4.2 The Design-Builder's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Design-Builder's Fee and the method for adjustment to the Fee for changes in the Work.)

« »

§ A.1.4.3 Guaranteed Maximum Price

§ A.1.4.3.1 The sum of the Cost of the Work and the Design-Builder's Fee is guaranteed by the Design-Builder not to exceed « » ($ « »), subject to additions and deductions for changes in the Work as provided in the Design-Build Documents. Costs that would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Design-Builder without reimbursement by the Owner.

(Insert specific provisions if the Design-Builder is to participate in any savings.)

« Design-Builder shall return to the Owner all unused funds from any Contingency account as a deduction from the Guaranteed Maximum Price. The Design-Builder shall not participate in any savings. All savings shall be credited to Owner. It is the requirement of this Agreement that if the actual Cost of the Work plus the Design-Builder's fee is less than the Guaranteed Maximum Price, as it may be adjusted by approved Change Orders, the entire amount of the savings shall be returned to Owner. »

§ A.1.4.3.2 Itemized Statement of the Guaranteed Maximum Price

Provided below is an itemized statement of the Guaranteed Maximum Price organized by trade categories, allowances, contingencies, alternates, the Design-Builder's Fee, and other items that comprise the Guaranteed Maximum Price.

(Provide information below or reference an attachment.)

«The Guaranteed Maximum Price includes an Owner Allowance in the amount of $1,500,000.00 for the exclusive use by the Owner for any purpose including, but not limited to, Project betterment, unforeseen site conditions and construction issues, if approved. »

§ A.1.4.3.3 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Design-Build Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the Owner is permitted to accept other alternates subsequent to the execution of this Amendment, attach a schedule of such other alternates showing the change in the Cost of the Work and Guaranteed Maximum Price for each and the deadline by which the alternate must be accepted.)

« »

§ A.1.4.3.4 Unit Prices, if any:

(Identify item, state the unit price, and state any applicable quantity limitations.)

Item	Units and Limitations	Price per Unit ($0.00)

§ A.1.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

« »

§ A.1.5 Payments

§ A.1.5.1 Progress Payments

§ A.1.5.1.1 Based upon Applications for Payment submitted to the Owner by the Design-Builder, the Owner shall make progress payments on account of the Contract Sum to the Design-Builder as provided below and elsewhere in the Design-Build Documents.

§ A.1.5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ A.1.5.1.3 Provided that an Application for Payment is received not later than the «fifteenth » day of the month, the Owner shall make payment of the undisputed amount to the Design-Builder not later than the «fifteenth » day of the «next » month. If an Application for Payment is received by the Owner after the application date fixed above, payment shall be made by the Owner not later than «forty-five » («45 ») days after the Owner receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ A.1.5.1.4 With each Application for Payment the Design-Builder shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Design-Builder on account of the Cost of the Work equal or exceed (1) progress payments already received by the Design-Builder, less (2) that portion of those payments attributable to the Design-Builder's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ A.1.5.1.5 With each Application for Payment the Design-Builder shall submit the most recent schedule of values in accordance with the Design-Build Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. Compensation for design services, if any, shall be shown separately. The Design-Builder's Fee shall be shown separately in two parts; that portion attributable to the Cost of the Work for contingencies and allowances, and that portion attributable to all other Cost of the Work. The schedule of values shall allocate the entire Guaranteed Maximum Price among: (1) the various portions of the Work and contingency for costs that are included in the Guaranteed Maximum Price (shown as Cost of the Work only, without general conditions or fee) but not otherwise allocated to another line item or included in a Change Order. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Owner may require. This schedule of values, unless objected to by the Owner, shall be used as a basis for reviewing the Design-Builder's Applications for Payment.

§ A.1.5.1.6 In taking action on the Design-Builder's Applications for Payment, the Owner shall be entitled to rely on the accuracy and completeness of the information furnished by the Design-Builder and shall not be deemed to have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Sections A.1.5.1.4 or A.1.5.1.5, or other supporting data; to have made exhaustive or continuous on-site inspections; or to have made examinations to ascertain how or for what purposes the Design-Builder has used amounts previously paid. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ A.1.5.1.7 Except with the Owner's prior approval, the Design-Builder shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ A1.5.1.8 The allocation of the Guaranteed Maximum Price under this Section A1.5.1 shall not constitute a separate guaranteed maximum price for the Cost of the Work of each individual line item in the schedule of values.

§ 11.1.5.3 When the Design-Builder allocates costs from a contingency to another line item in the schedule of values, the Design-Builder shall submit supporting documentation to the Owner.

§ A.1.5.4 Progress Payments—Cost of the Work Plus a Fee with a Guaranteed Maximum Price

§ A.1.5.4.1 Applications for Payment where the Contract Sum is based upon the Cost of the Work Plus a Fee with a Guaranteed Maximum Price shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the

expense that has actually been incurred by the Design-Builder on account of that portion of the Work for which the Design-Builder has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ A.1.5.4.2 Subject to other provisions of the Design-Build Documents, the amount of each progress payment shall be computed as follows:

.1 Take that portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 6.3.9 of the Agreement.

.2 Add that portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work, or if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing;

.3 Add the Design-Builder's Fee, less retainage of «five » percent («5.0 » %). The Design-Builder's Fee shall be computed upon the Cost of the Work at the rate stated in Section A.1.4.2 or, if the Design-Builder's Fee is stated as a fixed sum in that Section, shall be an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work bears to a reasonable estimate of the probable Cost of the Work upon its completion;

.4 Subtract retainage of «five » percent («5.0 » %) from that portion of the Work that the Design-Builder self-performs;

.5 Subtract the aggregate of previous payments made by the Owner;

.6 Subtract the shortfall, if any, indicated by the Design-Builder in the documentation required by Section A.1.5.1.4 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors, accountants or other representatives in such documentation; and

.7 Subtract amounts, if any, for which the Owner has withheld or nullified a payment as provided in Section 9.5 of the Agreement.

§ A.1.5.4.3 The Owner and Design-Builder shall agree upon (1) a mutually acceptable procedure for review and approval of payments to the Architect, Consultants, and Contractors and (2) the percentage of retainage held on agreements with the Architect, Consultants, and Contractors; and the Design-Builder shall execute agreements in accordance with those terms. Payments to the Architect shall be according to the requirements of the Design Criteria Package.

§ A.1.5.5 Final Payment

§ A.1.5.5.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Design-Builder not later than 30 days after the Design-Builder has fully performed the Contract and the requirements of Section 9.10 of the Agreement have been satisfied, except for the Design-Builder's responsibility to correct non-conforming Work discovered after final payment or to satisfy other requirements, if any, which extend beyond final payment.

§ A.1.5.5.2 The Owner's auditors, accountants, or other representatives will review and report in writing on the Design-Builder's final accounting within 60 days after the Design-Builder delivers the final accounting to the Owner. Based upon the Cost of the Work the Owner's auditors report to be substantiated by the Design-Builder's final accounting, and provided the other conditions of Section 9.10 of the Agreement have been met, the Owner will, within seven days after receipt of the written report of the Owner's auditors, either issue a final Certificate for Payment, or notify the Design-Builder in writing of the reasons for withholding a certificate as provided in Section 9.5.1 of the Agreement.

§ A.1.5.5.3 If the Owner's auditors', accountants, or other representatives report concludes that the Cost of the Work, as substantiated by the Design-Builder's final accounting, is less than claimed by the Design-Builder, the Design-Builder shall be entitled to proceed in accordance with Article 14 of the Agreement. Unless agreed to otherwise, a demand for mediation, or other dispute resolution as provided in the Contract Documents of the disputed amount shall be made by the Design-Builder within 30 days after the Design-Builder's receipt of a copy of the Owner's final Certificate for Payment. Failure to make such a demand within this 30-day period shall result in the substantiated amount reported by the Owner's auditors, accountants or other representatives becoming binding on the Design-

Builder. Pending a final resolution of the disputed amount, the Owner shall pay the Design-Builder the amount certified in the Owner's final Certificate for Payment.

ARTICLE A.2 CONTRACT TIME

§ A.2.1 Contract Time, as defined in the Agreement at Section 1.4.13, is the period of time, including authorized adjustments, for Substantial Completion of the Work.

§ A.2.2 The Design-Builder shall achieve Substantial Completion of the Work not later than « » (« ») days from the date of this Amendment, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

«Substantial Completion for the Project shall be August 4, 2023 »

Portion of Work	Substantial Completion Date

, subject to adjustments of the Contract Time as provided in the Design-Build Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

«As indicated in AIA A141-2014 between the parties »

§ A.2.3 The Design-Builder shall achieve Final Completion of the Work not later than «Sixty » («60 ») days from the actual date of Substantial Completion.

« »

ARTICLE A.3 INFORMATION UPON WHICH AMENDMENT IS BASED

§ A.3.1 The Contract Sum and Contract Time set forth in this Amendment are based on the following:

§ A.3.1.1 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ A.3.1.2 The Specifications:
(Either list the specifications here or refer to an exhibit attached to this Amendment.)

« »

Section	Title	Date	Pages

§ A.3.1.3 The Drawings:
(Either list the drawings here or refer to an exhibit attached to this Amendment.)

« »

Number	Title	Date

§ A.3.1.4 The Sustainability Plan, if any:
(If the Owner identified a Sustainable Objective in the Owner's Criteria, identify the document or documents that comprise the Sustainability Plan by title, date and number of pages, and include other identifying information. The Sustainability Plan identifies and describes the Sustainable Objective; the targeted Sustainable Measures; implementation strategies selected to achieve the Sustainable Measures; the Owner's and Design-Builder's roles

and responsibilities associated with achieving the Sustainable Measures; the specific details about design reviews, testing or metrics to verify achievement of each Sustainable Measure; and the Sustainability Documentation required for the Project, as those terms are defined in Exhibit C to the Agreement.)

Title	Date	Pages
Not applicable		

Other identifying information:

«Not applicable »

§ A.3.1.5 Allowances and Contingencies:
(Identify any agreed upon allowances and contingencies, including a statement of their basis.)

.1 Allowances

«Owner Allowance: $1,500,000 »

.2 Contingencies

« »

§ A.3.1.6 Design-Builder's assumptions and clarifications:

« »

§ A.3.1.7 Deviations from the Owner's Criteria as adjusted by a Modification:

« »

§ A.3.1.8 To the extent the Design-Builder shall be required to submit any additional Submittals to the Owner for review, indicate any such submissions below:

« »

ARTICLE A.4 DESIGN-BUILDER'S PERSONNEL, CONTRACTORS AND SUPPLIERS

§ A.4.1 The Design-Builder's key personnel are identified below:
(Identify name, title and contact information.)

.1 Superintendent

« »

.2 Project Manager

« »

.3 Others

« »

§ A.4.2 The Design-Builder shall retain the following Consultants, Contractors and suppliers, identified below:
(List name, discipline, address and other information.)

« »

ARTICLE A.5 COST OF THE WORK

§ A.5.1 Cost To Be Reimbursed as Part of the Contract

The term Cost of the Work shall mean direct, actual, and verifiable costs reasonably and necessarily incurred by the Design-Builder in the proper performance of the Work as described in this Article A.5. Costs constituting or comprising the Cost of the Work shall not include any items contained in A141-2014 as modified by the Owner for the project and listed as General Conditions items listed in Exhibit E of A141-2014. The Cost of the Work shall include only the items set forth in Section A.5.1.

§ A.5.1.1 Labor Costs

§ A.5.1.1.1 Wages of construction workers directly employed by the Design-Builder to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ A.5.1.1.2 Wages or salaries of the Design-Builder's supervisory and administrative personnel when stationed at the site and performing Work are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.1.3 Wages and salaries of the Design-Builder's supervisory or administrative personnel engaged at factories, workshops or while traveling, in expediting the production or transportation of materials or equipment required for the Work are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.1.4 Costs paid or incurred by the Design-Builder for employment-related taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Section A.5.1.1.

§ A.5.1.1.5 Bonuses, profit sharing, incentive compensation and any other discretionary payments paid to anyone hired by the Design-Builder or paid to the Architect or any Consultant, Contractor or supplier, with the Owner's prior approval.

§ A.5.1.2 Contract Costs. Payments made by the Design-Builder to the Architect, Consultants, Contractors and suppliers in accordance with the requirements of their subcontracts. Any Contractor Work to be performed by the Design-Builder's own forces or subsidiary of the Design-Builder on the basis of a bid or proposal submitted by the Design Builder, shall be treated as Work performed by a Contractor. The Design-Builder's compensation for such Contractor Work performed shall be based on the amount of the bid or proposal submitted by Design-Builder for such Work, rather than "actual costs" as provided elsewhere in Article 5 of this Amendment. Costs paid to the Design-Builder for such Work shall be treated only as "Contract Costs" for purposes of computing the amount due to the Design-Builder for the self-performed work. The Design-Builder, in furnishing a proposal for self-performed work, recognizes that the Design-Builder shall not be entitled to Design-Builder's Fee or Compensation for General Conditions for self-performed work.

§ A.5.1.3 Costs of Materials and Equipment Incorporated in the Completed Construction

§ A.5.1.3.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

§ A.5.1.3.2 Costs of materials described in the preceding Section A.5.1.3.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Design-Builder. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ A.5.1.4 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ A.5.1.4.1 Costs of transportation, storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Design-Builder at the site and fully consumed in the performance of the Work are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.4.2 Rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Design-Builder at the site and costs of transportation, installation,

minor repairs, dismantling and removal are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.4.3 Costs of removal of debris from the site of the Work and its proper and legal disposal are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.4.4 Costs of document reproductions, electronic communications, postage and parcel delivery charges, dedicated data and communications services, teleconferences, Project websites, extranets and reasonable petty cash expenses of the site office are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.
.

§ A.5.1.4.5 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, with the Owner's prior approval.

§ A.5.1.5 Miscellaneous Costs

§ A.5.1.5.1 Premiums for that portion of insurance and bonds required by the Design-Build Documents that can be directly attributed to the Contract. With the Owner's prior approval self-insurance for either full or partial amounts of the coverages required by the Design-Build Documents.

§ A.5.1.5.2 Sales, use or similar taxes imposed by a governmental authority that are related to the Work and for which (1) a Texas independent school district is exempt, and (2) the Owner has provided the Construction Manager with a tax exemption certificate or other documentation necessary to establish the Owner’s exemption from such taxes.

§ A.5.1.5.3 Fees and assessments for the building permit and for other permits, licenses and inspections for which the Design-Builder is required by the Design-Build Documents to pay.

§ A.5.1.5.4 Fees of laboratories for tests required by the Design-Build Documents, except those related to defective or nonconforming Work for which reimbursement is excluded by Section 15.5.3 of the Agreement or by other provisions of the Design-Build Documents, and which do not fall within the scope of Section A.5.1.6.3.

§ A.5.1.5.5 Royalties and license fees paid for the use of a particular design, process or product required by the Design-Build Documents; the cost of defending suits or claims for infringement of patent rights arising from such requirement of the Design-Build Documents; and payments made in accordance with legal judgments against the Design-Builder resulting from such suits or claims and payments of settlements made with the Owner's consent. However, such costs of legal defenses, judgments and settlements shall not be included in the calculation of the Design-Builder's Fee or subject to the Guaranteed Maximum Price. If such royalties, fees and costs are excluded by the second to last sentence of Section 3.1.13.2 of the Agreement or other provisions of the Design-Build Documents, then they shall not be included in the Cost of the Work.

§ A.5.1.5.6 With the Owner's prior approval, costs for electronic equipment and software directly related to the Work.

§ A.5.1.5.7 Deposits lost for causes other than the Design-Builder's negligence or failure to fulfill a specific responsibility in the Design-Build Documents.

§ A.5.1.5.8 Intentionally deleted

§ A.5.1.5.9 With the Owner’s prior approval, expenses incurred in accordance with the Design-Builder's standard written personnel policy for relocation, and temporary living allowances of, the Design-Builder's personnel required for the Work are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.5.10 That portion of the reasonable expenses of the Design-Builder's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work are excluded as costs to be reimbursed as Cost of the Work and are considered General Conditions cost.

§ A.5.1.6 Other Costs and Emergencies

§ A.5.1.6.1 Other actual, direct, and verifiable costs reasonably and necessarily incurred in the performance of the Work if, and to the extent, approved in advance in writing by the Owner.

§ A.5.1.6.2 Costs incurred in taking action to prevent threatened damage, injury or loss in case of an emergency affecting the safety of persons and property.

§ A.5.1.6.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Design-Builder or the Design-Builder's Contractors or suppliers, provided that such damaged or nonconforming Work was not caused by or contributed to in whole or in part by negligence or failure of the Design-Builder or the Design-Builder's foremen, engineers or superintendents, or other supervisory, administrative or managerial personnel or any person over whom Design-Builder has contact or supervision to fulfill a specific responsibility to the Owner set forth in this Agreement or the failure of the Design-Builder's personnel to supervise adequately the Work of the Contractors or suppliers; and further provided that such costs of repair or correction is not recoverable by the Design-Builder after exhausting all attempts to obtain same from insurance, Contractors, suppliers, or bonding companies.

§ A.5.1.7 Related Party Transactions

§ A.5.1.7.1 For purposes of Section A.5.1.7, the term "related party" shall mean a parent, subsidiary, affiliate or other entity having common ownership or management with the Design-Builder; any entity in which any stockholder in, or management employee of, the Design-Builder owns any interest in excess of ten percent in the aggregate; or any person or entity which has the right to control the business or affairs of the Design-Builder. The term "related party" includes any member of the immediate family of any person identified above.

§ A.5.1.7.2 If any of the costs to be reimbursed arise from a transaction between the Design-Builder and a related party, the Design-Builder shall notify the Owner of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If the Owner, after such notification, authorizes the proposed transaction, then the cost incurred shall be included as a cost to be reimbursed, and the Design-Builder shall procure the Work, equipment, goods or service from the related party, as a Contractor, according to the terms of Section A.5.4. If the Owner fails to authorize the transaction, the Design-Builder shall procure the Work, equipment, goods or service from some person or entity other than a related party according to the terms of Section A.5.4.

§ A.5.2 Costs Not to Be Reimbursed as Part of this Contract

The Cost of the Work shall not include the items listed below:

.1 Salaries and other compensation of the Design-Builder's personnel stationed at the Design-Builder's principal office or offices other than the site office, except as specifically provided in Section A.5.1.1;

.2 Expenses of the Design-Builder's principal office and offices other than the site office;

.3 Overhead and general expenses, except as may be expressly included in Section A.5.1;

.4 The Design-Builder's capital expenses, including interest on the Design-Builder's capital employed for the Work;

.5 Except as provided in Section A.5.1.6.3 of this Agreement, costs due to the negligence or failure of the Design-Builder, Contractors and suppliers or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable to fulfill a specific responsibility of the Contract;

.6 Any cost not specifically and expressly described in Section A.5.1;

.7 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded;

.8 Costs for services incurred during the Preconstruction Phase; and

.9 Subcontractor Default Insurance (SDI). However, at the time of the Guaranteed Maximum Price proposal, if the Design-Builder can show that there would be either a significant cost savings, or an enhancement of the Project schedule, the Owner will have the option to allow the Design-Builder to include the purchase SDI for specific Subcontractors. Any cost for such Bonds or Insurance, if approved, will be added as a "Cost of the Work" and must be approved in writing by the Owner.

§ A.5.3 Discounts, Rebates, and Refunds

§ A.5.3.1 Cash discounts obtained on payments made by the Design-Builder shall accrue to the Owner if (1) before making the payment, the Design-Builder included them in an Application for Payment and received payment from

the Owner, or (2) the Owner has deposited funds with the Design-Builder with which to make payments; otherwise, cash discounts shall accrue to the Design-Builder. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Design-Builder shall make provisions so that they can be obtained.

§ A.5.3.2 Amounts that accrue to the Owner in accordance with Section A.5.3.1 shall be credited to the Owner as a deduction from the Cost of the Work.

§ A.5.4 Other Agreements

§ A.5.4.1 When the Design-Builder has provided a Guaranteed Maximum Price, and a specific bidder (1) is recommended to the Owner by the Design-Builder; (2) is qualified to perform that portion of the Work; and (3) has submitted a bid that conforms to the requirements of the Design-Build Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then the Design-Builder may require that a Change Order be issued to adjust the Guaranteed Maximum Price by the difference between the bid of the person or entity recommended to the Owner by the Design-Builder and the amount of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

§ A.5.4.2 Agreements between the Design-Builder and Contractors shall conform to the applicable payment provisions of the Design-Build Documents, and shall not be awarded on the basis of cost plus a fee without the prior consent of the Owner. If an agreement between the Design Builder and a Contractor is awarded on a cost plus a fee basis, the Design-Builder shall provide in the agreement for the Owner to receive the same audit rights with regard to the Cost of the Work performed by the Contractor as the Owner receives with regard to the Design-Builder in Section A.5.5, below.

§ A.5.4.3 The agreements between the Design-Builder and Architect and other Consultants identified in the Agreement shall be in writing. These agreements shall be promptly provided to the Owner upon the Owner's written request.

§ A.5.5 Accounting Records

The Design-Builder shall keep full and detailed records and accounts related to the cost of the Work and exercise such controls as may be necessary for proper financial management under the Contract and to substantiate all costs incurred. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's auditors shall, accountants or other representatives, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Design-Builder's records and accounts, including complete documentation supporting accounting entries, books, correspondence, instructions, drawings, receipts, subcontracts, Contractor's proposals, purchase orders, vouchers, memoranda and other data relating to the Contract. The Design-Builder shall preserve these records for a period of three years after final payment, or for such longer period as may be required by law, including any record retention policy applicable to the Owner.

§ A.5.6 Relationship of the Parties

The Design-Builder accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to exercise the Design-Builder's skill and judgment in furthering the interests of the Owner; to furnish efficient construction administration, management services and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests.

This Amendment to the Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**DESIGN-BUILDER** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

GALVESTON INDEPENDENT SCHOOL DISTRICT

Exhibit B

COURVILLE STADIUM DESIGN CRITERIA PACKAGE

TABLE OF CONTENTS

I. NOTE TO THE ARCHITECT - ENGINEER

These Design Criteria have been prepared for your thorough review and application. You will find that the material presented will answer many questions that you and your consultants might have. Generally speaking, all architects and engineers (A/Es) are expected to meet the performance standards set forth in these guidelines; however, it is not intended that they limit the application of the professional's knowledge, experience, innovative design, or that they replace the normal thought process incumbent in the application of the A/E's standard of care. These guidelines are the minimum performance base requirements of products, systems and materials. If you wish to request deviations from these guidelines, a letter to the Owner stating your request for each specific change is required. Each deviation must be approved by the Owner prior to the implementation of the change to the project.

II. SECTION A – REQUIREMENTS FOR ARCHITECTURAL SERVICES

A. Scope of Architect's Services

1. The Architect shall provide professional services as set forth in this Agreement. The Architect shall comply with Texas Administrative Code, Title 19 Section 61.1040, pertaining to services and actions required of the Architect. Architect certifies that Architect is a registered professional architect or engineer licensed to practice in the State of Texas. Pursuant to the Texas Occupations Code, any civil, structural, mechanical, or electrical plans, specifications, or opinions of probable cost for construction must be prepared by a registered professional engineer or a registered architect, whichever is appropriate, and who is licensed to practice in the State of Texas. Architect agrees to notify Owner should Architect's registration status change. Architect certifies that Architect and Architect's employees and agents are eligible to work under federal, state and local immigration laws and regulations.

2. The Architect shall use the Architect's best efforts, skill, judgment and abilities to perform the services in compliance with all laws, regulations, codes, ordinances and orders of governmental bodies having jurisdiction, to further the interests of the Owner in accordance with the Owner's requirements and procedures, and to represent that the Project, if built in compliance with the plans and specifications, will comply with all applicable laws, codes and ordinances. The Architect shall be responsible to the Owner for all costs and damages resulting from: (1) defects in design; (2) non-workability of design details; (3) failure of the Architect to comply with the terms of this Agreement; and (4) errors and omissions of the Architect. Any designs, drawings or specifications prepared or furnished by Architect that contain errors, conflicts, or omissions will be promptly corrected by Architect at no additional cost to Owner. Owner's approval, acceptance, use of, or payment for, all or any part of Architect's services shall in no way alter Architect's obligations or Owner's rights hereunder. The Architect shall perform its services as expeditiously as is consistent with such professional skill and care and the orderly progress of the Project.

3. The Architect shall not be responsible for an Owner's directive or substitution made or given without the Architect's approval. The Architect shall review, and be responsible for compliance with, laws, codes, and regulations applicable to the Architect's services, including, without limitation, Texas Health and Safety Code Chapter 341. The Architect shall respond in the design of the Project to requirements imposed by governmental authorities having jurisdiction over the Project. The Architect shall comply with all policies, regulations and rules of the Owner, including, but not limited to, those related to employee conduct (such as prohibitions against alcohol, weapons, drugs, fraternization, harassment, and tobacco on school property), and fraud and financial impropriety. Architect shall certify that he has used the best professional judgment and reasonable care consistent with the practice of architecture and/or engineering in the State of Texas in executing the Construction Documents. Architect's signature and seal on the Construction Documents shall certify compliance. Architect shall perform a building code search under applicable regulations that may influence the Project and shall certify that the design has been researched before it is final. In executing the certifications required under the provisions of this Section, Architect shall exercise his/her reasonable professional judgment and care consistent with the practice of architecture in the State of Texas and applicable law. Architect shall design the Project in such a manner that the Project or each part of the Project is readily accessible to and usable by individuals with disabilities, in compliance with the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, federal regulations interpreting the Americans with Disabilities Act and Section 504, Texas Government Code Chapter 469, the Texas Accessibility Standards, all applicable

requirements or standards of the Texas Department of Licensing and Regulation, and all applicable requirements or standards of the American National Standards Institute. It shall be the responsibility of Architect to address revisions or amendments to applicable codes or standards which become effective prior to the date of Substantial Completion. Revisions or amendments to applicable codes or standards which become effective after the date of Notice to Proceed with construction shall be addressed by the Architect, and shall be compensated as an Additional Service.

4. The Architect shall, at appropriate times, contact governmental authorities required to approve the Construction Documents and entities providing utility services to the Project. In designing the Project, the Architect shall respond to comply with applicable design requirements imposed by those authorities and such entities providing utility services. The Architect shall design the extension of utility services necessary for the completion of the project but not provided by entities providing utility services to the Project. The cost of construction of the utilities shall be considered a Cost of the Work and the Architect shall be compensated for such design work as a Cost of the Work. The Architect shall bear any remedial costs to correct or replace Work not designed in compliance with current federal, state, or local laws at the time the Project is designed and permitted.

5. The Architect shall assist the Owner in connection with the Owner's responsibility for filing documents required for the approval of governmental authorities having jurisdiction over the Project. When the services under this Agreement include contract administration services, the General Conditions of the Contract for Construction shall be the edition of AIA Document A201-2017, as amended for this Project, and Architect herein agrees to abide by same. Architect agrees that the AIA Document A201-2017 may be subject to subsequent amendments based upon negotiations between Owner, Architect and Contractor. As a condition of further service, Architect shall execute the negotiated amendments, which shall constitute Architect's agreement to adhere to any such negotiated amendments.

6. The Owner shall pay fees payable to the Texas Department of Licensing and Regulation (TDLR) and Registered Accessibility Specialists (RAS) for document review and inspection relative to the Elimination of Architectural Barriers Act and the Architect will submit the documents to the TDLR for review and approval. The Architect shall arrange for and attend building assessment by TDLR representative. The Architect shall prepare responses for the use of the Owner in addressing inspection deficiencies identified by the inspection, at no cost to the Owner. Architect shall submit the Construction Documents for review and approval to the Texas Department of Licensing and Regulation any time the renovation, modification, or alteration of the Work has an estimated construction cost of $50,000 or more, and shall notify Owner of same. Contractor shall not file an application with any local governmental entity for a building construction permit until after Architect's submission to the Texas Department of Licensing and Regulation.

7. The Architect shall assist the Owner with the provision of the educational program and educational specifications, which shall be approved by Owner's Board of Trustees, per 19 Texas Administrative Code section 61.1040. The Architect shall review the program and specifications furnished by Owner to ascertain the specific requirements of the Project and shall arrive at a mutual written understanding of such requirements with Owner. Architect shall include all components of Owner's program in the Project, unless specific written agreement to delete a component is received from Owner.

8. Programming: Based on the Owner's approval of the preliminary design and the Owner's schedule and budget for the Work, the Architect shall prepare Schematic Design Documents for the Owner's approval. The Schematic Design

Documents shall establish the conceptual design of the Project and illustrate the scale and relationship of the Project components. The Schematic Design Documents shall consist of drawings and other documents including a site plan, if appropriate, and preliminary building plans, sections and elevations; and may include some combination of study models, perspective sketches, or digital representations. Preliminary selections of major building systems and construction materials shall be noted on the drawings or described in writing.

9. Schematic Design: The Architect shall submit the Schematic Design Documents to the Owner, and request the Owner's approval. The Architect shall submit electronic (Native CAD and word processing program) format copies of the Architects and the Architect's Consultants' Instruments of Service to the Owner as a prerequisite to payment for services completed during this phase. Architect shall not proceed to the Design Development Document Phase without the approval of Owner's Board of Trustees, or the Board's designee; provided, however, this approval shall not relieve Architect of Architect's responsibility and liability to provide documents in accordance with this Agreement, and are free from material defects or omissions. Architect shall bear full responsibility for, and all resulting excess costs incurred by Architect in, proceeding without required approval.

10. Design Development: Based on the Owner's approval of the Schematic Design Documents, and on the Owner's authorization of any adjustments in the Project requirements and the budget for the Cost of the Work, the Architect shall prepare Design Development Documents for the Owner's approval. The Design Development Documents shall illustrate and describe the development of the approved Schematic Design Documents, shall refine the Project design, and shall consist of drawings and other documents including plans, sections, elevations, typical construction details, and diagrammatic layouts of building systems to fix and describe the size and character of the Project as to architectural, structural, mechanical and electrical systems, and other appropriate elements outlined in this Agreement. The Design Development Documents shall also include outline specifications that identify major materials and systems and establish, in general, their quality levels. A color and material sample board is required. The Architect shall submit the Design Development Documents to the Owner, advise the Owner of any adjustments to the estimate of the Cost of the Work, redesign the Project to comply with Owner's budget, and request the Owner's approval. Architect shall not proceed to the Construction Documents Phase without the approval of Owner's Board of Trustees, or Board's designee; provided, however, this approval shall not relieve Architect of Architect's responsibility and liability to provide documents which are sufficient for Owner to complete the construction of the Project, and are free from material defects or omissions. Architect shall bear full responsibility for, and all resulting excess costs incurred by Architect in, proceeding without Board approval (if Board approval if required) and request the Owner's approval. The Architect shall submit electronic (Native CAD and word processing program) format copies of the Architects and the Architect's Consultants' Instruments of Service to the Owner as a prerequisite to payment for services completed during this phase. The Owner's decisions on matters relating to aesthetic effect shall be final. To the extent that Contractor recommends aesthetic revisions to Owner, Architect shall be consulted.

11. Construction Documents: Based on the Owner's approval of the Design Development Documents, and on the Owner's authorization of any adjustments in the Project requirements and the budget for the Cost of the Work, the Architect shall prepare Construction Documents for the Owner's approval. The Construction Documents shall illustrate and describe the further development of the approved Design Development Documents and shall consist of Drawings and Specifications setting forth in detail the quality levels and performance criteria of materials and

systems and other requirements for the construction of the Work. "Construction Documents" means: all Drawings, specifications, submittals, transmittals, deliverables, instructions to Contractor, and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants which shall set forth in detail the requirements for construction of the Project. The Construction Documents shall reflect all agreements between Owner and Architect concerning Owner's budgetary constraints, programmatic needs and expectations as to quality, functionality of systems, maintenance costs, and usable life of equipment and facilities. Said Construction Documents shall reflect the Owner's educational program and educational specifications, the State educational adequacy standards in 19 TAC Section 61.1040 and the standards set forth in this Agreement. The Architect shall provide Construction Documents which are sufficient for Owner to complete construction of the Project, are free from material defects or omissions, and comply with all applicable laws, ordinances, codes, rules, and regulations, as of the date of issuance of Construction Documents. The Owner and Architect acknowledge that, in order to perform the Work, the Contractor will provide additional information, including Shop Drawings, Product Data, Samples and other similar submittals, which the Architect shall review. Owner and Owner's authorized representatives shall be given the opportunity to review all Construction Documents prior to release of the Construction Documents for bidding, proposal or negotiation purposes. The Architect shall incorporate the design requirements of governmental authorities having jurisdiction over the Project into the Construction Documents including, without limitation, school facility standards found in 19 Texas Administrative Code, Subchapter CC, Section 61.1040, and Texas Health and Safety Code Section 341.065. Architect shall certify that he/she has reviewed the standards contained in 19 Texas Administrative Code Section 61.1040, and used the best professional judgment and reasonable care consistent with the practice of architecture and/or engineering in the State of Texas in executing the Construction Documents. Architect shall also certify that the Construction Documents conform to the provisions of 19 Texas Administrative Code Section 61.1040, except as indicated on the certification. Architect's signature and seal on the Construction Documents shall certify compliance. Architect shall perform a building code search under applicable regulations that may influence the Project, and shall certify that the design has been researched before it is final, as required by 19 Texas Administrative Code Section 61.1040. Architect shall also certify that the facilities have been designed according to the provisions of 19 Texas Administrative Code section 61.1040, based on the educational program, long-range school facility plan, educational specifications, building code specifications, and all documented changes to the Construction Documents provided by the Owner, as required by 19 Texas Administrative Code, section 61.1040. Architect shall complete the Texas Education Agency's (TEA's) Certification of Project Compliance, available on the TEA website. In executing the certifications required under the provisions of this Section, Architect shall exercise his/her reasonable professional judgment and care consistent with the practice of architecture in the State of Texas and applicable law. Architect shall design the Project in such a manner that the Project or each part of the Project is readily accessible to and usable by individuals with disabilities, in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act, federal regulations interpreting the Americans with Disabilities Act and Section 504, Texas Government Code Chapter 469, the Texas Accessibility Standards, all applicable requirements or standards of the Texas Department of Licensing and Regulation, and all applicable requirements or standards of the American National Standards Institute. After Owner's approval of the Construction Documents, the Architect shall not make or approve any changes in the Work, unless those changes do not involve an adjustment in the Contract Sum or Contract time, without prior written consent of the owner. The Architect shall be liable to

Owner for any damages arising from or caused by any changes to the Work made or approved by the Architect without the Owner's prior written consent.

a) The Architect shall furnish evidence of quality control checking of the Construction Documents for the project. Evidence shall consist of the Design Submission Checklists exhibits and the following:

(1) Structural calculations;

(2) Wind load calculations;

(3) Mechanical equipment sizing calculations, and;

(4) Electrical equipment sizing calculations

12. Pursuant to 19 Texas Administrative Code §61.1040, the Architect shall sign and seal the Construction Documents and certify on the Certification of Project Completion form developed by the Texas Education Agency as follows:

a) It has reviewed the standards contained in 19 TAC Chapter 61 and has used the best professional judgment and reasonable care consistent with the practice of architecture in the State of Texas in executing the Construction Documents and that these documents conform with the provisions of 19 TAC §61.1040.

b) It has performed a building code search under applicable regulations that may influence the project and the design has been researched prior to becoming final.

c) It has designed the facility according to the provisions of 19 TAC §61.1040 based on the long-range school facility plan and / or educational specifications, building codes specifications, and all documented changes to the Construction Documents provided by the District.

13. Construction Administration: The Architect, or his authorized representative shall visit the site at least once per week (or more per week when deemed necessary by the Owner's Designated Representative or when necessary to protect Owner's interest, and at other intervals appropriate to the stage of Contractor's operations) (1) to inspect the progress, quantity and quality of the Work completed; (2) to reject any observed nonconforming Work; (3) to become familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed (4) to guard the Owner against defects and deficiencies in the Work, (5) to determine if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents and on time, and (6) to document progress of the Work, in written and photographic form. Furthermore, a minimum of two job site meetings per month from commencement of construction through Final Completion will be attended by the Architect. Attendees will include Owner, the Contractor's project manager and/or superintendent, Architect's project representative, and Architect. Architect or his authorized representative will provide continuous on-site observations prior to and during all concrete pours that contribute to the structural integrity of the building, including all pours of concrete piers, footings, grade beams, floor slabs, and concrete superstructure components, if applicable. In addition, Architect or his authorized representative will provide on-site observations prior to covering up or closing up of portions of the construction that, if covered, would conceal problems with the structural integrity of the Project. Architect will advise Owner of the need for any third-party laboratory or testing services to assist the Architect, and will assist Owner in development of Requests for Proposals or other solicitations for any required testing services approved by Owner. On the basis of the site visits, or-site observations, or inspections by the Architect, the Architect shall keep the Owner and Owner's Contractors reasonably informed about of the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent

construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. To expedite decision making and improve project communications, the Architect's consultants shall attend when ongoing construction activities pertain to the scope of the consultant's services, unless attendance is waived by the Owner in writing. Said meetings will commence at the time of Construction commencement and shall cease after Substantial Completion. The architect, and consultants to the architect, shall prepare site observation reports following each occasion when the architect or consultant to the architect is at the project site, including regularly scheduled progress meetings. The site observation report shall contain photos of the general condition of the project, construction crews on site, work in progress, deficiencies noted in the work including communication given in verbal format, action items and follow up needs generated during the course of the site visit. Site observation reports shall be distributed with 48 hours of the site observation to the Owner and the Contractor. Action items developed during the site observation shall be tracked during subsequent site visits and discussed during construction progress meetings. Architect shall guard Owner against defects and deficiencies in the Work and shall promptly notify Owner and Contractor orally regarding the defect or nonconforming Work, which notice shall be followed by notice in writing of defects and nonconforming work noted and corrective actions taken or recommended. The Architect shall reject Work that does not conform to the Contract Documents. The Architect shall be required to promptly notify the Owner of any nonconforming Work, and shall reject such nonconforming work unless the Owner objects to the rejection, in writing, within 24 hours of such notification. Whenever the Architect considers it necessary or advisable, the Architect will recommend to the Owner additional inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work is fabricated, installed or completed. Performance of any additional inspection or testing, which would result in additional cost to the Owner, shall require advance notice to and written approval of the Owner. 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. Architect shall promptly notify Owner and Contractor, orally and in writing, of any observed fault or defect in the Project or nonconformance with Contract Documents, upon discovery of the defect or nonconformance, and shall notify Owner of all corrective actions taken or recommended. The testing or inspections required by this Section are subject to the requirements of Chapter 2269 of the Texas Government Code. The Architect shall neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents. Any services by Architect made necessary due to Architect's failure to discover a construction defect or nonconforming work shall be at no additional cost to Owner. Any services by Architect made necessary by Architect's design errors or omissions shall be at no additional cost to Owner. The Architect shall prepare a listing of all required submittals for the project and distribute to the Owner and Contractor. The Architect shall review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, for the purpose of checking for conformance with the Contract Documents and all laws, statutes, codes and requirements applicable to Architect's design services. The Architect's action in reviewing submittals shall be taken in accordance with the approved submittal schedule or, in the absence of an approved submittal schedule, within ten (10) business days. If it is determined that any submittal does not comply with the requirements of the Contract Documents, then Architect shall require Contractor to

come into compliance. The Architect shall promptly report in writing to the Contractor and Owner any errors, inconsistencies and omissions discovered by the Architect in the Shop Drawings, Product Data and Samples. The Architect is not authorized to approve changes involving major systems such as HVAC, roof, foundation, outward appearance, color schemes, floor plans, building materials, or mechanical equipment without Owner's prior written consent.

14. Project Completion: The Architect's inspections shall be conducted with the Owner to check conformance of the Work with the requirements of the Contract Documents and to verify the accuracy and completeness of the list submitted by the Contractor of Work to be completed or corrected. The Contractor's Project Manager or superintendent shall participate in the preparation of the Contractor's punch list that is submitted to the Architect and Owner for supplementation. Upon receipt, the Architect shall perform a spot review to determine the adequacy and completeness of the Contractor's punch list. Should the Architect determine that the Contractor's punch list lacks sufficient detail or requires extensive supplementation, the punch list will be returned to the Contractor for further inspection and revision. The date of Substantial Completion will be delayed until the punch list submitted is a reasonable representation of the work to be done. Upon receipt of an acceptable Contractor's punch list, the Contractor's Superintendent or Project Manager shall accompany the Architect, his Consultants and the Owner (at its discretion) during their inspections and the preparation of verbal or written additions to the Contractor's punch list. The Contractor's Project Manager or Superintendent shall record or otherwise take notes of all supplementary items and incorporate into the Final Punch List. A typed addition to the supplements to the punch list will be made by the Contractor. This procedure will produce a Final Punch List that has the Contractors, Architects, Consultants and Owner's comments incorporated in only one list using the Owner's Project Management Software. The Architect shall coordinate the work of the consultants to ensure timely arrival to the project for punch list development and timely creation of the punch list from the punch list observation. The Architect shall independently verify that the verbal or written additions to the Contractor's punch list made by the Architect, his Consultants and the Owner (at its discretion) during their inspections are incorporated into the Contractor's punch list. The punch list shall contain an area or room description, and a photograph of each deficiency listed in the punch list and a space for contractor and architect to individually indicate the date of the correction and observation of the correction, respectively. The Architect shall, upon notice from the Contractor that punch list work is complete, verify the accuracy and completeness punch list work. Incomplete work shall be communicated to the Contractor and Owner, in writing, by the Architect. When Substantial Completion has been achieved, the Architect shall inform the Owner about the balance of the Contract Sum remaining to be paid the Contractor, including the amount to be retained from the Contract Sum, if any, for final completion or correction of the Work. When all of the Work is finally completed and all required documentation has been submitted, and the Contractor is ready for a final inspection, it shall notify the Owner and the Architect thereof in writing. Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Contractor shall issue its final Application for Payment. The Architect shall, after verifying completeness, forward to the Owner the following information received from the Contractor: (1) consent of surety or sureties, if any, to reduction in or partial release of retainage or the making of final payment; (2) affidavits, receipts, releases and waivers of liens, or bonds indemnifying the Owner against liens; and (3) any other documentation required of

the Contractor under the Contract Documents.

15. Prepare multiple Project renderings at each stage of project development to convey the project features. Renderings shall address site layout, exterior materials, interior materials and convey scale of the project features. Renderings shall be scaled, line work quality at a minimum, when presented for Schematic Design approval. Renderings shall be photo-realistic when presented for Design Development and Construction Document approval. As needed, prepare diagrams to illustrate key project attributes (e.g. traffic flow, special event access restrictions, special instructional spaces)

16. Prepare interior graphics consisting of graphic murals, artwork, logos, banners and similar items; prepare interior directional signage design; and prepare exterior vehicle and pedestrian directional signage design.

17. The Architect shall, with ten (10) business days of construction notice to proceed provide conformed Construction Documents incorporating all approved changes during bidding and negotiation. Changes include approved substitution requests, approved alternates, value engineering, and clarifications during bidding, and changes required by review of the Authorities Having Jurisdiction. The Conformed documents for construction shall include the graphic illustration of changes previously conveyed only with written narrative or abbreviated notes. The Architect shall affix a seal to the Conformed documents and shall cause the consultants to do the same.

18. The Architect shall provide all telecommunications and data design services for the project. Architect shall consult with Owner to develop level of need, expectations, and documentation for that design. A complete and functioning system is required. The Architect will design for installation and point to point testing by the contractor all cabling, including copper systems and fiber optic cabling within the building. The Owner will design and install fiber optic cable from utility provider to Main Distribution Frame.

a) The following shall be included in the Contract Documents:
   (1) All electrical power for any equipment
   (2) Infrastructure and wiring for Data drops
   (3) Data Infrastructure for Wireless Access Points
   (4) Clocks, paging, and Intercom Systems
   (5) Scoreboard
   (6) Theatrical needs, lighting, sound system
   (7) HVAC controls and wiring
   (8) Conduit to “D-Mark” panel for Phone System and Fiber Cable
   (9) Conduit for Fiber Cable to Patch Panels
   (10) Cameras, cabling, and infrastructure for Security Monitoring System
   (11) Security and Access Controls and Infrastructure
   (12) Power for I-Pad Cart charging stations
   (13) MDF and IDF Racks
   (14) Conduit pathway with pull string from utility provider source into building MDF for OFOI fiber cabling
   (15) Fiber backbone cable and conduit pathway between MDF and IDF and supported equipment

b) The following shall be purchased by Owner IT contractor and be installed by the Owner IT contractor, except as noted. Architect shall include details in the Contract Documents regarding mounting height, blocking, receptacles, cabling between devices and controllers.
   (1) Interactive TVs and TV Monitors (OFOI by Owner-selected vendor)

(2) Any Projectors, screens, and Monitor Arrays for Video (OFOI by Owner-selected vendor)

(3) Digital menu boards (OFOI by Owner selected vendor)

(4) Network Server Switches, routers, UPS Units and System Hardware for Racks (OFOI by Owner-selected vendor)

(5) All Classroom, Computer Lab, CTE and Administrative Computers (OFOI by Owner internal staff)

(6) Wireless Access Points (OFOI for Access Point, Cabling by Contractor)

(7) Printers and copiers

(8) IP Phones (OFOI by Owner-selected vendor)

(9) Fiber backbone cable to building in CFCI conduit

19. Architect's Compensation: When compensation for Basic Services is based on a stipulated sum or a percentage basis of the Cost of the Work, Compensation shall be paid based on the percentage of the services actually completed by Architect. Progress payments for services in each phase for services completed shall total the percentages applicable to each phase of Architect's services as follows. Compensation for Basic services will be deemed earned upon satisfactory completion of the phases:, the proportion of compensation for each phase of services shall be as follows:

a) Programming/Schematic Design Phase: Ten Percent (10%)

b) Design Development Phase: Thirty Percent (30%)

c) Construction Document Phase: Thirty Percent (30%)

d) Proposal or Negotiation Phase: Five Percent (5%)

e) Construction Phase: Twenty Percent (20%)

f) Closeout Phase (payable upon Final Completion) Two Percent (2%)

g) Warranty Phase (payable monthly during 12-months after Substantial Completion) Three Percent (3%)

h) Total Basic Compensation: One Hundred Percent (100%)

III. SECTION B – OTHER REQUIREMENTS OF THE CONTRACTOR

A. Miscellaneous requirements

1. The Contractor is responsible for providing all coordination necessary with authorities having jurisdiction and for work resulting from such coordination, whether called for by these design criteria or not.

2. The Contractor is responsible for development of a design that satisfies the requirements necessary for the Owner to obtain a WPI-8 certificate, including those services during design, and construction needed to ascertain compliance with applicable standards. Defects in either design or construction that cause the Owner to be unable to attain WPI-8 certification for the Project shall be considered defects in the Work and subject to remedies stated in the contract documents.

3. This Design Criteria Package must be used in conjunction with Technical Design Guidelines as each document describes the expectations for the project, including the quantity of required spaces for the Project.

4. Contractor shall monitor all regulatory approvals required during the Working Drawing Phase. Contractor shall meet and confer with the Authorities Having Jurisdiction to advance the project through the approval process. The contractor shall furnish any comments received or summary of discussions to the Owner and Architect for evaluation.

5. Construction Management Plan: The Contractor shall prepare a

construction management plan that includes:

a) A schedule including the sequencing of design and construction of the project

b) Investigations, if any, to be undertaken to ascertain subsurface conditions and physical conditions of existing surface and underground utilities

c) Alternate strategies for fast-tracking or phasing construction

d) A list of possible work packages to be constructed under multiple Guaranteed Maximum Price proposals

e) Permitting strategy

f) Procurement recommendations for long-lead items

6. Contractor shall prepare and periodically update a Project schedule for the Owner's acceptance. The Contractor shall obtain the Architect's approval for the portion of the Project schedule relating to the performance of the Architect's services. The Project schedule shall coordinate and integrate the Contractor's services, the services of Contractor's subcontractors, the Architect's services, other Owner consultants' services, and the Owner's responsibilities; and identify items that affect the Project's timely completion. The updated Project schedule shall include the following: submission of the Guaranteed Maximum Price proposal; components of the Work; times of commencement and completion required of each Subcontractor; ordering and delivery of products, including those that must be ordered in advance of construction; the occupancy requirements of the Owner, showing portions of the Project having occupancy priority and fixed completion dates, and proposed date of Substantial Completion and proposed date of Final Completion acceptable to Owner. If preliminary Project schedule updates indicate that previously approved schedules may not be met, the Contractor shall make appropriate recommendations to the Owner and Architect and, if directed by the Owner, shall implement necessary corrective action.

7. Phased Construction

a) The Contractor, in consultation with the Architect, shall provide recommendations with regard to accelerated or fast-track scheduling, procurement, and sequencing for phased construction. The Contractor shall take into consideration cost reductions, cost information, constructability, provisions for temporary facilities, and procurement and construction scheduling issues.

8. Cost Estimates

a) Contractor shall prepare, based upon Design Documents prepared by the Architect and identified by the Owner, its own cost estimate of the Total Project Cost, of the Project at several times, as specified below. Contractor shall compare its cost estimate with the cost estimate independently prepared by the Architect for these same design documents and endeavor to resolve discrepancies in the estimates to the satisfaction of the Owner, and with the goal that both cost estimates are less than or equal to the Owner's Total Project Cost. Contractor shall inform the Owner and recommend, if necessary, appropriate modifications of the Design Documents to lower both the Contractor's and the Architect's independent estimates to amounts equal to or lower than the Total Project Cost. Contractor's cost estimates shall be separated into discrete phases as the Owner may require for completion of the Project and prepared to reflect the full and complete cost of the Project to facilitate the Owner's evaluation of the Total Project Cost and the Owner's right to award multiple Guaranteed Maximum Price proposals as allowed elsewhere in the Agreement. Contractor's cost estimates shall be provided according to standards as specified below. Contractor shall include all costs to construct the building including items such as, General Conditions, bonds, insurance, permit fees, wage rates, Contractor fees, escalation costs, and other costs. A description of the cost assumptions shall be furnished by the Contractor. Construction cost estimates shall

be developed/updated and submitted as a part of each of the following submittals:

(1) Schematic Design at 50% and 99%, Uniformat elemental categories and detailed to Level 2

(2) Design Development at 50% and 99%; Masterformat detailed to Level 3;

(3) Construction Documents; 50% milestone; Masterformat Level 3, specific to Project specification section; 90% milestone; Masterformat Level 3, specific to Project specification section

(4) As Needed: Where Owner requests pricing for options such as alternates, phases, material options, and other items that may be required to give the Owner maximum flexibility in Design Document decision making and Guaranteed Maximum Price proposal approval.

b) Each cost estimate shall:

(1) Reflect the best professional estimate of actual costs anticipated.

(2) Establish internal estimating allowances, consistent with good professional practice, appropriate to the phase of development. Larger allowances are assumed held at early phases gradually diminishing to zero at completion of final cost estimate.

9. The Contractor shall furnish surveys to describe physical characteristics, legal limitations and utility locations for the site of the Project, and a written legal description of the site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; designated wetlands; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions, and other necessary data with respect to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All the information on the survey shall be referenced to a Project benchmark.

10. The Contractor shall furnish services of geotechnical engineers, which may include test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations.

11. Contractor shall prepare an agenda for all meetings. The agenda shall be distributed not less than 48 hours prior to the start of the meeting. The agenda shall contain the date of the meeting, location for the meeting, the time for the meeting, the requested participants and specific detail about the topics to be discussed so that the participants arrive prepared for productive outcomes. Where a meeting is a regularly occurring event, the meeting agenda shall incorporate all previous open discussion items in a sequential topic and date logical order. The Architect shall be an active participant in the development of the agenda and proactive in the resolution of matters scheduled for discussion. The Architect shall participate in all construction progress meetings and all special meetings. The Contractor shall be an active participant in the development of the agenda and proactive in the resolution of matters scheduled for discussion by proposing solutions to causes for delay, cost increase and conflicts with Owner's operational needs. The Contractor shall prepare and distribute meeting notes (minutes) and ensure coordination of issues raised during the meetings with responsible project stakeholders. This will include construction progress meetings, which the Contractor will chair. Meeting notes (minutes) will be issued no later than three (3) working days following the date of the meeting. The Contractor shall prepare meeting minutes for all meetings attended by the Contractor. The meeting minutes shall consist of the date of the meeting, location for the meeting, the time for the meeting, the meeting attendees,

detail record of all topics discussed, the person responsible for the topic comment/decision/instruction, a listing of the party responsible for the topic, a listing of all action items, a listing of the date assigned, a listing of the date due, a listing of the date closed (retain closed items for one subsequent meeting). Additionally, the meeting minutes shall contain all documents distributed during the course of the meeting; sign in sheet, sketches, plans and specifications, project schedule, request for information logs, change proposal request logs, request for information, pay applications, etc. The minutes shall be distributed not more than 48 hours following the meeting. The Construction Progress Meetings shall contain the following topics as a minimum:

a) Discuss and Approve Previous Meeting Minutes
b) Review Project Progress and Planned Progress
   (1) Completed work
   (2) Planned work
   (3) Presentation and discussion of updated construction progress schedule
c) Payment Applications
d) Report on Issues Which May Impede Planned Progress
e) Laboratory Testing
f) Review of Submittal Schedule and Status of Submittals
g) Review of RFI
h) Review of RFP/procurement solicitation
i) Review of Change Proposals and Change Orders
j) Safety
k) Punch List
l) Closeout
m) Other Business Related to the Work

IV. SECTION C – GENERAL PERFORMANCE OUTCOMES

A. General

1. Roofing type: All buildings shall use modified bitumen

2. Provide parapet as needed to screen roof top mounted HVAC equipment with wind rating as required per code and AHJ

3. Provide lightning detection and alert system

4. Perform risk assessment of lightning potential and provide lightning protection system. As a minimum, provide protection for press box, light poles, and bleacher system.

5. Provide natural gas powered backup generator system as required to support the emergency functions indicated by the respective building codes and reference standards applicable to the project and required by the Authorities Having Jurisdiction

B. Architectural Character

1. Community access must be limited to game-day activities to preserve the longevity of the asset.

2. Consolidate service access (dumpsters, transformers, generators, grease traps, deliveries, storage) to minimize the impact on visual characteristics of the site

3. Building plans must be simple in shape and size, with avoidance of complex shapes and unnecessary features affecting the façade and building envelope. Building façade should provide visual character and include details necessary to

address the pedestrian scale of the project.

4. Buildings must utilize durable materials and be “timeless” in the choice of finishes; interior and exterior. Materials and designs must be respectful to the historic nature of Galveston. Avoid fad materials or trendy design concepts and colors

5. Minimize glazing exposed to the public to limit vandalism. Where glazing is required, laminated glass is required to satisfy wind and storm requirements and to meet impact requirements from vandalism.

6. The primary entry(ies) to the stadium should be recognizable and easily distinguished from the other features of the site. Use of masonry columns, overhangs, arch features and similar treatments should be considered to identify the point of access.

7. Service and mechanical areas should be screened from view and have restricted access

8. Provide multiple initial exterior design options, including cost, to the Owner for development by the Contractor for selection by the Owner.

C. Schedule

1. Work at the project location shall not begin until two days following the last home football game in 2022.

2. The project must be substantially complete by August 4, 2023

D. Site and Civil

1. Paving, wherever provided, and unless otherwise required by the AHJ, shall be not less than 7″ thick reinforced concrete paving. Paving within the Owner’s property line is generally intended to support ambulance, light truck and utility vehicle traffic. Contractor shall provide saw-cut control joints not less than 4′-0″ on center each way as a minimum standard.

2. Comply with City standards for paving, irrigation and landscaping

3. Provide accent paving at two entry locations consisting of concrete pavers on concrete sub-bed, up to 2,400 square feet of paved area

4. Furnish all utilities required for a complete project and as directed by the AHJ

5. Provide dumpsters as required by Facility Design Standards

E. Athletic Field

1. Synthetic turf field designed to accommodate high school football, and soccer sports

2. Playing surface not less than 12″ above 100 year flood elevation or greater as required by AHJ

3. Scope of work to include all labor, material, equipment, transportation and services to install complete new vertical draining infilled synthetic turf surfacing system for the designated field area. System to be as herein specified including, but not specifically limited to the following:

a) Independent testing of synthetic turf materials prior to shipment to project site.

b) Review and acceptance or certification of the existing permeable aggregate top course as it applies to installation of turf system, permeability and warranty implementation.

c) Installation of complete vertical draining infilled synthetic turf surfacing system on stadium field.

d) Installation of all inlaid or tufted (as applicable) field lines and markings as

indicated on the drawings.

e) Installation of an in-situ elastic layer pad system, 19mm thickness.

f) Removeable goal posts, and protective padding with logo

g) Soccer goals, with wheels

h) Provide extra turf materials to the Owner for future repair and protective purposes.

i) Provide all appropriate maintenance and repair manuals and warranty package to Owner.

j) The artificial turf shall be specifically designed, manufactured and installed for the intended sports and events. Typically sports include, but are not limited to, football, soccer, lacrosse, field hockey, baseball and softball. At the time of substantial completion, the system's shock attenuation shall have an average G-max value less than 110 for a padded system and less than 135 for a non-padded system, based on ASTM-F355A. At no time shall the G-max value exceed 145 for a padded system and 165 for a non-padded system throughout the life of the warranty.

k) Provide tow behind sweeper unit to the Owner for field maintenance. Provide one per school site.

l) Train field maintenance personnel in proper care maintenance procedures.

m) Colors, line markings

(1) Provide two-color 10-yard pattern

(2) Up to six color end zone panel

(3) Multi-color midfield logo not less than 20 yards in width and height

(4) Goal line 8”

(5) Playing field boundary 12”

(6) Number size 6’ high by 4’ wide, with drop shadow

(7) Provide inlaid center logo as noted on plans.

(8) Provide inlaid end zones as noted on plans.

4. Include concrete pad to accommodate training tables, water dispensing, electricity connections, not less than 6′ x 40′

5. Infilled synthetic turf with pad by pre-approved manufacturers

a) Field Turf (817) 505-7810

b) Hellas Construction (512) 250-2910

c) AstroTurf (210) 367-0709

d) Shaw Industries (214) 864-4347

6. Submittals prior to ordering

a) Provide product samples for approval of color, seam construction, backing for each color proposed

b) Provide a colored striping plan detailing lines, numbers and letters. Coordinate with Owner or Owner's Representative and Architect to get final approval of all designated colors, dimensions and logo/lettering designs.

7. Warranty

a) The warranty coverage shall not be prorated nor place limits on the amount of the field's usage.

b) The Field Builder shall submit its written company warranty: 8-year warranty, which warrants the usability and playability of the artificial turf system for its intended uses. A 3rd party insured 8-year warranty from an A-Rated domestic insurance carrier is required in addition to the Field Builder's warranty. Letters of credit in lieu of an insurance policy are no acceptable.

c) The Field Builder's warranty must have the following characteristics:

(1) Provide full coverage for a minimum of eight (8) years from the date of Substantial Completion.

(2) Warrant materials and workmanship.

(3) Warrant that the materials installed meet or exceed the system specifications.

(4) Repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.

(5) Be from a single source covering workmanship and all materials.

(6) Assure the availability of exact or substantially the same replacement materials for the artificial turf system installed for the full warranty period.

(7) Include general wear and damage caused from UV degradation. The warranty shall specifically exclude vandalism and acts of God beyond the control of the Turf Manufacturer or Field Builder.

(8) Cover defects in the installation and workmanship. Assure the installation was done in accordance with both the Field Builder's recommendations and any written directives of the Field Builder's on-site representative.

(9) Shall be limited to repair or replacement of the affected areas at the option of the Field Builder, and shall include all necessary materials, labor, transportation costs, etc. to complete said repairs.

(10) The Field Builder may be required, upon the request of the Owner, to provide a list of ten (10) clients for which they have completed after-the-sale warranty work.

(11) All designs, game markings and layouts shall conform to all currently applicable National Federation State High School Association or NCAA rules and regulations, or league specific requirements, depending on what applies.

(12) All components and Field Builder’s installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, shall withstand full climatic exposure in the location of the field, be resistant to insect infestation, rot, fungus and mildew; it shall also withstand ultra-violet rays and extreme heat, it shall allow the free flow of water horizontally to perimeter areas and vertically to the gravel blanket and into the field drainage system below the surface.

(13) The adhesive bonded or sewn seams of all system components shall provide a permanent, tight, secure and hazard-free athletic playing surface. All inlaid markings (game lines, logos, etc.) shall remain in place throughout the duration of the warranty period.

(14) The installed artificial turf system's drainage capability shall allow water flow through the system (turf & infill) at a rate of 10 inches +/- per hour.

8. Additional materials
   a) Green turf: 500 SF not less than 5 foot width
   b) White turf: 100 lf of 4” wide lines
   c) Colored turf: 100 sf not less than 2 foot width

F. Seating

1. Accommodate 7,100 total seats
   a) 4,300 home side
      (1) 1,500 bleacher seats with backrest, back to back spacing 33”, horizontal spacing 21”

(2) 2,500 bleacher seats, back to back spacing 33”, horizontal spacing 18”

(3) 300 band section seats, end zone location, back to back spacing 33”, horizontal spacing 21”, connected to and at same elevation as main seating

b) 2,800 visitor side

(1) 2,500 bleacher seats, back to back spacing 33”, horizontal spacing 18”

(2) 300 band section seats, end zone location, back to back spacing 33”, horizontal spacing 21”, connected to and at same elevation as main seating

c) Each seat shall have row and seat number permanently affixed

2. Materials

a) Galvanized steel frame risers, stringers, columns

b) Clear anodized aluminum walk surfaces

c) Clear anodized aluminum stair risers and treads

d) Clear anodized aluminum bleacher seats

e) Aluminum privacy screen

f) Aluminum soffit

g) Aluminum gutter and downspout

h) Aluminum handrails and guardrails

i) Galvanized chain link fencing screen at perimeter railing located at sides and rear seating sections

3. Configuration

a) Straight-line alignment

b) Goal line to goal line plus ramps as needed

c) End zone seating sections for band

d) Continuous elevated aluminum walkway adjacent to edge of field, not less than 48” above field surface

e) Accessible seating as required by code

f) Provide clear, column-free, concourse level passage beneath the seating from end to end of the bleachers to allow circulation pathway and congregation space for attendees

G. Field and General Site Lighting

1. 75 foot candles uniform lighting levels

2. Light poles and mounting heights to comply with requirements of nearby aviation activities

3. Galvanized (interior and exterior surfaces) or concrete poles acceptable, provided wind load criteria are satisfied

4. LED design

5. Light fixtures shall be capable of being lowered for maintenance and storm protection

6. Emergency safety lighting to meet life safety code

7. Provide security lighting at perimeter of stadium facility (concessions, bleachers, restrooms) not less than 30 foot candles, full cut-off fixture

H. Directional Signage and Graphics

1. Provide signage to indicate directions to the following:

a) Ticket entries

b) Gate numbers / designation at each entry
c) Site signage designating pathway to home and visitor (4)
d) Restrooms
e) Concessions
f) Seating section vomitorium sectional numbers

2. Gateway entrance feature (I.e. archway). Allow four locations total. Include masonry columns, truss-style archway, cut / cast lettering, and decorative metal picket style fencing 12′ linear feet on either side of masonry columns. Swing gates shall be decorative metal picket style with logo panel not less than 16 square feet.

3. Room signage as indicated by code and as indicated in Technical Guidelines

I. Fencing and Gates

1. Provide vinyl coated, 8′-0″ high, top and bottom wire, perimeter chain link fencing around entire perimeter of the property. Include allowance for 200 linear feet of sign panel affixed to fencing system for use in advertising, sponsorships, branding. Owner will install graphics onto panels.

2. Provide vinyl coated, 4′-0″ high, top and bottom wire, perimeter chain link fencing around entire perimeter of the field as needed to separate spectators from players and coaches and prohibit field access. Fencing may terminate at bleachers, buildings, and other fixed structures needed to create barrier to field access. Separate home and visitor attendees.

3. Provide vinyl coated, perimeter chain link fencing around exposed perimeter of the bleachers (home and visitors) at railing systems where 30″ above the fall surface.

4. Provide vinyl coated, 8′-0″ high, top and bottom wire, fence screen for the entire length of fencing around exposed perimeter of the bleachers at the concourse space (home and visitor). Fence screen / banner will include custom graphics design by Architect. Screen will be 100% privacy blockage. 5-year warranty against fade and cracking. Provide for two gate openings of 8′-0″ width on home side and on visitor side (four total).

5. Vehicular gates (2 pair of gates) to accommodate ambulance access

6. Pedestrian egress gates as required by code

J. Scoreboard

1. Stadium logo signage – Internally illuminated, full color sign, not less than 12′x12′ dimension, mounted to press box

2. Stadium scoreboard

a) Multi-sport full-color LED video board to accommodate football, and soccer. LED display, 10mm pixel pitch, 6,789 dots/sqm, nominal 42’x24’. Include (2) play clocks. Include duplicate game clock integrated with the field scoreboard system in referee dressing room, and each locker room

b) Include physical graphic panel / sign above LED board including custom graphic / logo. Rear panel vinyl graphic of equal dimension to LED board face.

3. Video cameras

a) General: Contractor shall provide communications cable pathway from each camera location to designated control room in the press box. Provide 120V, 20A circuit to j-box at each camera location. Provide data communications cable (terminated) with power-over-ethernet extender, and dedicated ground wire. Test all cabling end to end.

b) One scoreboard mounted, remote control pan-tilt-zoom (Owner furnished,

owner installed)

c) One film deck camera (Owner furnished, owner installed)

K. Communications Systems

1. Public address system
   a) Distributed speaker system, not less than size speakers per field side
   b) System shall be free of short circuits, ground loops, parasitic oscillation, excessive system noise, hum, RF interference, and instability of any form
   c) Seating area: up to 99dB SPL, spatial variation +/- 3dB at 3kHz, frequency response +/- 3 dB from 200Hz to 4kHz
   d) Concourse, restroom, concession: up to 92dB SPL, spatial variation +/- 3dB at 3kHz, frequency response +/- 3 dB from 200Hz to 4kHz
   e) Test and balance speakers for uniform coverage to meet specified dB targets
2. Distributed Wireless Internet system
   a) Provide private distributed antenna system to serve the following spaces. Not less than 50Mb download, 5Mb upload with full occupancy
      (1) Press box
      (2) Concessions
      (3) Restrooms
      (4) Locker room
      (5) Face of bleachers at field level home and visitor with 50 foot radius from 50-yard line
3. Coach communications
   a) Separate home and visitor system
   b) Wireless, no base, communications system with dedicated frequency from coach to press box, and separate offence and defense frequencies
   c) Provide not less than six headsets per side of field and two spare
   d) Provide full field coverage
4. Referee communications
   a) Full field coverage
   b) Integrated with P/A system to allow broadcast throughout stadium seating area
   c) Two headsets (1 main, 1 spare)
5. Field level microphones
   a) Handheld microphones (4)
6. Conduit pathway system and power for communications
   a) Provide conduit pathway system to secure permanent and temporary communications cabling
   b) Utilize cable trays, handholes, and conduit sleeves to provide convenient temporary access for communications cabling between press box spaces, ground-level operations, and equipment
   c) Provide quadruplex every 20-yards on home and visitor side of field, mounted to the face of the bleachers
   d) Communications panel to accommodate field microphones, cameras, and speakers. Field mounted at end zone location, pedestal, waterproof (NEMA 3R). Provide dedicated ground. Coordinate plug style with owner furnished equipment.
   e) Spare conduit (2), 4” from home field bleacher face to visitor side bleacher face

7. Assisted listening system and devices as required by ADA
8. Security communications (Handheld radios)
    a) Owner furnished, owner installed

L. Field Water

1. Provide six ¾″ hose bibbs
    a) Two in the facia of the bleacher screen wall on each side of the stadium
    b) One on each end of the stadium within the wall of a permanent structure

M. Concessions Facilities

1. Accommodate six serving lines
2. Serving line windows not less than 48″ wide
3. Provide awning that extends 6′-0″ from the face of the building over each serving line opening(s)
4. Storage room for concession purposes, including stainless steel wire metal shelving (15 units, approximately 18″ x 36″)
5. Storage room for general purposes, including stainless steel wire metal shelving (15 units, approximately 18″ x 36″)
6. Food prep and hold space 48 lf total stainless steel counter space with stainless steel base cabinet storage below
7. Custodial room, including mop sink, wall sink, shelving and accessory hangers
8. Split system with electric heat strip, Roof-mounted equipment is acceptable
9. Wall mounted circulation fans (1 per every 300 sf)
10. Exterior wall construction must incorporate brick veneer, and building insulation to eliminate heating and cooling loss, vapor transmission and water penetration
11. Each duplex or equivalent quadruplex shall be individually circuited. No device shall be more than 80% of the rated capacity of receptacle.
12. Electronic menu board at each serving line integrated with messaging system.
13. 12 quadruplex outlets at serving line
14. Additional quadruplex at warming counter not more than 4′-0″ apart
15. Data duplex at each serving line for point of sale system
16. IDF Room (100 sf minimum), with mini-split
17. Contractor furnished, contractor installed
    a) Refrigerators, clear glass front (16 lf storage total)
    b) Beverage coolers, 480 bottle capacity, clear glass front
    c) Freezers (48 cf storage total)
    d) Ice maker (2@ 200 lb)
    e) Three compartment sink as required by Health Department
    f) Stainless steel ADA accessible counter at each serving line window, with positive drainage to exterior, grommet holes at each point of sale unit
    g) Drawer/door base cabinets
    h) Microwaves (8 total)
    i) Cheese and chili warmers (6 total)
    j) Hot dog roller and warmer (3 total)
    k) Pop corn popper (2 total)

l) Refrigerators, clear glass front (16 lf storage total)
m) Beverage coolers, 480 bottle capacity, clear glass front
n) Freezers (48 cf storage total)
o) Ice maker (2@ 200 lb), one serving ¾" cube, one serving "sonic" ice
p) Three compartment sink as required by Health Department
q) Microwaves (4 total)
r) Electronic menu board (48") at each serving line, exterior rated
s) Rolling shelving unit between each serving line for staging of food and beverage for sale

18. Air curtain at each serving line
19. Slope floors to drain to floor drain
20. Epoxy painted CMU or FRP as required by Health Department
21. Overhead coiling door at each serving line window
22. Owner Furnished, Contractor Installed
    a) Paper towel dispenser
    b) Soap dispenser
23. Owner Furnished, Owner Installed
    a) Point of sale system

N. Restroom, Ticket, and Storage Buildings (two)

1. Men's Restroom to accommodate required attendees per code
2. Women's Restroom to accommodate required attendees per code
3. Family Restroom (1)
4. Water cooler with bottle filler to accommodate required attendees per code
5. Custodial room, including mop sink, wall sink, shelving and accessory hangers
6. Storage with stainless steel wire metal shelving (5 units, approximately 18" x 36")
7. Ticketing
    a) Security cameras (3 interior and 3 exterior)
    b) Drop safe
8. Split system with electric heat strip, Roof-mounted equipment is acceptable
9. Exhaust fans as required by code
10. Solid plastic toilet partitions
11. Exterior wall construction must incorporate brick veneer, and building insulation to eliminate heating and cooling loss, vapor transmission and water

penetration

12. One quadruplex at each ticket window
13. Data duplex at each serving line for point of sale system
14. IDF Room (100 sf minimum), with mini-split
15. Epoxy painted CMU or FRP as required by Health Department
16. Slope floors to drain to floor drain
17. Wall mounted plumbing fixtures
18. Open ceiling, flat black above 9’-0”
19. Overhead coiling door at each ticket window
20. Owner Furnished, Contractor Installed
    a) Paper towel dispenser
    b) Soap dispenser
21. Owner Furnished, Owner Installed
    a) Point of sale system

O. Field House

1. Coaches office (Home)
    a) Owner furnished, owner installed furniture
    b) Lockers
    c) Coffee bar
    d) Refrigerator
2. Coaches shower and restroom (Home)
3. AD office and restroom
4. Reception
    a) Built-in display case
5. Training (Home)
    a) Direct access to field
    b) Ice machine
    c) Refrigerator – full size
    d) Space for two training room tables
    e) Base and upper cabinets (6’-0” lf)
6. Laundry
    a) Commercial washer and dryer (Owner furnished, contractor installed)
    b) Commercial appliance connections for washer and dryer
    c) Ventilation as required by code for selected equipment
7. IDF Room (100 sf minimum), with mini-split
8. Electrical
9. Training (Visitor)
    a) Direct access to field
    b) Ice machine
    c) Refrigerator – full size
    d) Space for two training room tables (Owner furnished, owner installed)
    e) Base and upper cabinets (6’-0” lf)
10. Official’s dressing room (2)
    a) Shower

b) Sink
c) Toilet
d) Lockers

11. Coaches shower and restroom (Visitor)
12. Coaches office (Visitor)
    a) Owner furnished, owner installed furniture
    b) Lockers
13. Locker room, shower, and toilet (Home)
    a) Varsity football lockers (60)
14. Locker room, shower, and toilet (Visitor)
    a) Varsity football lockers (60)
15. Field equipment storage
    a) Ice machine 500 pounds
    b) Storage with stainless steel wire metal shelving (5 units, approximately 18” x 36”)
16. Field groomer storage
    a) Overhead access door
    b) Adjacent to field
    c) Locate opening in fencing near the access point for the groomer storage
    d) Storage with stainless steel wire metal shelving (2 units, approximately 18” x 36”)
17. Water cooler with bottle filler to accommodate required attendees per code
18. Custodial room, including mop sink, wall sink, shelving and accessory hangers
19. Split system with electric heat strip, three zones; locker room 1, locker room 2, remainder of the building. Roof-mounted equipment is acceptable
20. Exhaust fans as required by code
21. Solid plastic toilet partitions
22. Exterior wall construction must incorporate brick veneer, and building insulation to eliminate heating and cooling loss, vapor transmission and water penetration
23. Epoxy painted CMU or FRP as required by Health Department
24. Slope floors to drain to floor drain
25. Wall mounted plumbing fixtures
26. Owner Furnished, Contractor Installed
    a) Paper towel dispenser
    b) Soap dispenser

P. Press Box Facilities

1. General
    a) Roof overhang to provide shade and weather protection for windows at field view side and shall be not less than 3’-0”
    b) Exterior surface shall be insulated metal panel system from standard colors and profiles, and must meet applicable wind criteria
    c) Roof drainage shall be single-sloped to rear-mounted gutter and downspout system

2. Window configuration
   a) Minimum 48” wide between mullions or structural columns
   b) Minimum window height is from counter top to ceiling height, and not less than 5’-0”
   c) Maximum 6” wide visual obstruction from structural columns
   d) Minimize vertical mullion system width to maximize view
3. Required Spaces
   a) Film deck located at 50-yard line at same elevation as other press box rooms and accessible via interior corridor
   b) Home coaches, south of film deck. Field view
   c) Home radio / media, four seats at window, south home coaches. Field view
   d) Video control room, south of home radio / media. Field view
   e) Administration / board room / VIP, north of film deck. Field view
   f) Visitor coaches, north of administration / board room / VIP. Field view
   g) Storage, including stainless steel wire shelving
   h) Custodial room, including mop sink, wall sink, shelving and accessory hangers
   i) Mechanical room
   j) Men’s restroom
   k) Women’s restroom
   l) Electrical room
   m) Break / food service area
      (1) Accessible from corridor, not enclosed room
      (2) Plastic laminate base cabinets, plywood construction (18 lf), ADA compliant
      (3) Plastic laminate upper cabinets, plywood construction (18 lf), ADA compliant
      (4) Free standing island (30” x 60” x 34”h), ADA compliant
      (5) Solid surface counter tops
   n) IDF Room (100 sf minimum), with mini-split
   o) Elevator and lobby
4. Split system with electric heat strip, zoned for field facing side and non-field facing side. Roof-mounted equipment is acceptable
5. Exterior wall construction must incorporate building insulation to eliminate heating and cooling loss, vapor transmission and water penetration
6. Each duplex or equivalent quadruplex shall be individually circuited. No device shall be more than 80% of the rated capacity of receptacle.
7. Contractor furnished, contractor installed
   a) Refrigerators / freezer
   b) Ice maker (1@ 70 lb)
   c) Two compartment sink, with disposal
   d) Microwaves (2)
8. Owner Furnished, Contractor Installed
   a) Paper towel dispenser
   b) Soap dispenser

EXHIBIT C

Insurance and Bond Requirements

Part 1: CONTRACTOR'S LIABILITY INSURANCE

The Contractor shall carry and maintain in force the insurance described below. Prior to execution of the Contract, the Contractor shall procure insurance coverage in the types and amounts as follows:

1. Workmen's Compensation	All liability arising out of Contractor's employment of workers and anyone for whom Contractor shall be liable for Worker's Compensation claims. Worker's Compensation is required and no "alternative" form of insurance shall be permitted. Waiver of Subrogation in favor of Owner and Program Manager required.
2. Employer's Liability	$1,000,000.00
3. Commercial General Liability	
a. Each Occurrence	$1,000,000.00
b. General Aggregate	$2,000,000.00 (A Designated Construction Project General Aggregate Limit shall be provided)
c. Personal & Advertising Injury	$1,000,000.00 (Each Person)
d. Products & Completed Operations	$1,000,000.00 (for one (1) year commencing with issuance of Final Certificate of Payment)
4. Property Damage	
a. Each Occurrence	$1,000,000.00
b. Aggregate	$2,000,000.00
c. Independent Contractors	$1,000,000.00 (Each Occurrence), $2,000,000.00 (Aggregate)
5. Commercial Automobile Liability	
a. Bodily Injury/Property Damage	$1,000,000.00 (Combined single limit)
6. Umbrella or Excess Liability	
a. Each Occurrence and Aggregate	(a) One times Contract amount for all Contracts with the following minimum and maximum: (i) $1,000,000.00 minimum limit (ii) $25,000,000.00 maximum limit (b) The Umbrella shall provide coverage over the workmen's compensation, comprehensive general liability, and comprehensive automobile liability.
7. All Risk Builder's Risk	All Risk Builder's Risk against the perils of fire, lightening, wind storm, hurricane, hail, explosion, riot, civil commotion, smoke, aircraft, land vehicles, vandalism, malicious mischief, and all other perils in the amount one hundred percent (100%) of the value of the improvements including transit and materials stored off site. Additionally, this coverage shall provide protection to the full replacement value for boiler and machinery

	equipment up to installation, during testing, and until acceptance by Owner.

1. The required insurance must be written by a company licensed to do business in Texas at the time the policy is issued. In addition, the company must be acceptable to the Owner. The Owner's Representative will contact the State Board of Insurance to confirm that the issuing companies are admitted and authorized to issue such policies in the State of Texas.
2. The General Liability and Automobile so issued in the name of Contractor shall also name the Owner and Program Manager as additional insured. The coverage afforded to the additional insured under the policy or policies shall be primary insurance. It is the intent of the parties to this Agreement that the General Liability coverage required herein shall be primary to and shall seek no contribution from all insurance available to Owner, with Owner's insurance being excess, secondary and non-contributing. The Commercial General Liability coverage provided by Contractor shall be endorsed to provide such primary and non-contributing liability. If the additional insured has other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis.
3. If the insurance is written with stipulated amounts deductible under the terms of the policy, the Contractor shall pay the difference attributable to deductions in any payment made by the insurance carrier on claims paid by this insurance to the extent Contractor the subject loss is due to the fault of Contractor. If the Owner is damaged by the failure of the Contractor to maintain such insurance and to so notify the Owner then the Contractor shall bear all reasonable costs properly attributable thereto.
4. The insurance required by this Exhibit A 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. Nothing contained herein shall limit or waive Contractor's legal or contractual responsibilities to Owner or others.
5. Contractor shall have its insurance carrier(s) furnish to Owner insurance certificates in form satisfactory to Owner specifying the types and amounts of coverage in effect, the expiration dates of each policy, and a statement that no insurance will be canceled or materially changed while the Work is in progress without thirty (30) calendar day's prior written notice to Owner. Contractor shall permit Owner to examine the insurance policies, or at Owner's option, Contractor shall furnish Owner with copies, certified by the carrier(s), of insurance policies required in Exhibit A. If Contractor neglects or refuses to provide any insurance required herein, or if any insurance is canceled, Owner may, but shall not be obligated to, procure such insurance and the provisions of Section 7 hereof shall apply.
6. Contractor and its Subcontractors shall not commence the shipment of equipment or materials or commence the Work at the site until all of the insurance coverage required of Contractor and its Subcontractors are in force and the necessary certificates and statements pursuant to Section 5 hereof have been received by Owner and the Architect or Owner has issued a written notice to proceed.
7. As an alternative and at Owner's option and expense, Owner may elect to furnish or to arrange for any part or all of the insurance required by Exhibit A hereof. If Owner so elects, it shall notify, in writing, Contractor and issue a Change Order therefor, but no adjustment to the scheduled completion date or the Contract Sum shall be allowed.
8. A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Workers' Compensation Commission, or a coverage agreement (DWC-81, DWC-82, DWC-83, or

DWC-84), showing statutory Workers' Compensation insurance coverage for the person's or entity's employees providing services on a Project is required for the duration of the Project.

a. 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 Owner.
b. Persons providing services on the Project ("Subcontractor" in Texas Labor Code 406.096) include 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 contracted directly with the Contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, contractors, 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.
c. Services include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a Project. Services do not include activities unrelated to the Project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
d. 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 Section 401.011(44) for all employees of the Contractor providing services on the Project for the duration of the Project.
e. The Contractor must provide a certificate of coverage to the Owner prior to being awarded the contract.
f. 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 Owner showing that coverage has been extended.
g. The Contractor shall obtain from each person providing services on a Project, and provide to the Owner:
    i. A certificate of coverage, prior to that person beginning Work on the Project, so the Owner will have on file certificates of coverage showing coverage for all persons providing services on the Project; and
    ii. 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.
h. The Contractor shall retain all required certificates of coverage for the duration of the Project and for one (1) year thereafter.
i. The Contractor shall notify the Owner in writing by certified mail or personal delivery, within ten (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.
j. 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.
k. The Contractor shall contractually require each person with whom it contracts to provide services on a Project, to:
    i. 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 of its employees providing services on the Project for the duration of the Project;

ii. 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;

iii. 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;

iv. 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;
3. Retain all required certificates of coverage on file for the duration of the Project and for one (1) year thereafter;
4. Notify the Owner in writing by certified mail or personal delivery, within ten (10) days after the person knew, or should have known, of any change that materially affects the provision of coverage of any person providing services on the Project; and
5. Contractually require each person with whom it contracts to perform as required by items 1-4, with the certificates of coverage to be provided to the person for whom they are providing services.

l. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Owner 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 a 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.

m. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor that entitles the Owner to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the Owner.

n. The coverage requirement recited above does not apply to sole proprietors, partners, and corporate officers who are excluded from coverage in an insurance policy or certificate of authority to self-insure that is delivered, issued for delivery, or renewed on or after January 1, 1996. 28 TAC 110.110(i).

9. The Owner and Contractor shall waive all rights against (1) each other and the Contractors, Subcontractors, agents and employees each of the other, and (2) the Architect and separate Contractors, if any, and their contractors, Subcontractors, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance applicable to the Work. The foregoing waiver afforded the Architect, his agents and employees shall not extend to the

liability imposed by other portions of the Agreement. The Owner or the Contractor, as appropriate, shall require of the Architect, separate contractors, contractors and Subcontractors by appropriate agreements, written where legally required for validity, similar waivers, each in favor of all other parties enumerated in this Exhibit A.

Part 2: PERFORMANCE BOND AND PAYMENT BOND

1. The Contractor is required, as a condition precedent to the execution of the Contract, to execute a PERFORMANCE BOND in the form required by TEXAS STATUTES, in an amount equal to ONE HUNDRED PERCENT (100%) of the Contract Sum.
2. The Contractor is required, as a condition precedent to the execution of the Contract, to execute a PAYMENT BOND in the form required by TEXAS STATUTES, in an amount equal to ONE HUNDRED PERCENT (100%) of the Contract Sum as security for payment of all persons performing labor and furnishing materials in connection with this Contract. (Bonding Company is to furnish such forms). All bonds shall name the Owner as additional Obligee.
3. The Payment and Performance Bond shall meet requirements of Chapter 2253 of the Texas Governmental Code. All bonds shall be issued by a surety company licensed, listed and authorized to issue bonds in the State of Texas by the Texas Department of Insurance. The surety company may be required by the Owner to have a rating of not less than "B" in the latest edition of Best's Insurance Reports, Property-Casualty. The surety company shall provide, if requested, information on bonding capacity, other projects under coverage and shall provide proof to establish adequate financial capacity for this Project.
    a. Should the bond amount be in excess of ten percent (10%) of the surety company's capital and surplus, the surety company issuing the bond shall certify that the surety company has acquired reinsurance, in a form and amount acceptable to the Owner, to reinsure the portion of the risk that exceeds ten percent (10%) of the surety company's capital and surplus with one or more reinsurers who are duly authorized and admitted to do business in Texas and that amount reinsured by an reinsurer does not exceed ten percent (10%) of the reinsurer's capital and surplus.
    b. The Sureties shall promptly file a signed copy of the Contract, Performance, and Payment Bonds with the Owner in full compliance with Chapter 2253 of the Texas Governmental Code or, in the case of a Construction Manager, as required by Article 8 of the A133-2009 as modified by the Parties.
4. All bonds will be reviewed by the Architect for compliance with the Contract Documents prior to execution of the contract. In the event that the Architect has any questions concerning the sufficiency of the bonds, the bonds will be referred to the Owner or the Owner's representative for review and decision.
5. All bonds shall be originals. The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the Power-of-Attorney. The name, address, and telephone number of a contact person for the bonding company shall be provided.
6. Upon the request in writing 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 permit a copy to be made.
7. Bonds shall be signed by an agent resident in the State of Texas and the date of the bond shall be the date of execution of the contract. If at any time during the continuance of the contract, the surety of the Contractor's bonds becomes insufficient, Owner shall have the right to require

additional and sufficient sureties which the Contractor shall furnish to the satisfaction of the Owner within ten (10) business days after notice to do so. In default thereof, the Contractor may be suspended, and all payment or money due to the Contractor withheld.

8. By inclusion of this Section 8 in the Contract Documents, the surety which issues the bonds is hereby notified that the Owner, the Architect, and their agents and employees do not represent and will not be responsible for the surety's interests during the course of the Work. To protect its interests, the surety shall have the right to attend pay estimate meetings, review Applications for Payment when requested in writing by them, comment upon and make recommendations regarding payments, and inspect the Work in the presence of the Contractor and the Architect. By providing the bonds for the Work, the surety shall and hereby waives any cause of action against the Owner, the Architect, their agents and employees, for any loss suffered by the surety by reason of overpayment of any amounts to the Contractor, unless such is a direct result of a fraudulent or grossly negligent act committed by such party.

Part 3: INSURANCE REQUIRED OF PROFESSIONAL SERVICE PROVIDERS CONTRACTED TO THE CONTRACTOR

1. The Architect shall provide and maintain the following insurance with indemnification limits not less than the amounts indicated, until termination of this Agreement. The Architect and Consultants shall not commence work until all required insurance coverage has been obtained and such insurance has been reviewed and accepted by the Owner. Certificates of Insurance on the current ACORD form shall be issued to the Owner showing all required insurance coverage.

Insurance Required	Limit Required
Automobile Liability Insurance covering Any Auto	$1,000,000.00 Combined Single Limit (Ea. Accident)
Comprehensive (Commercial) General Liability insurance including Products, Completed Operations, Independent Contractors, Broad Form Property Damage, Pollution and Blanket Contractual Liability coverage. Any XCU exclusions to be removed when underground work is performed.	$1,000,000.00 Occurrence $2,000,000.00 Aggregate $1,000,000.00 Personal and Advertising Injury $500,000.00 Fire Damage $10,000.00 Medical Payments Per Project Aggregate. Evidence of coverage must be shown on certificates of insurance
Professional Errors and Omissions Liability Insurance required for all licensed or certified professionals, (e.g., all Architects and Engineers)	$3,000,000.00 Per Claim and Per Occurrence $5,000,000.00 Annual Aggregate Retroactive to date preceding date of contract must be shown in the Comments/Remarks Section of the ACORD form. Professional Errors and Omissions Liability Insurance shall be maintained for three (3) years past substantial completion of construction contract, including last completed phase for phased project delivery. If coverage is cancelled or non-renewed prior to contract completion date, the Architect shall purchase "Extended Reporting Period" coverage for three (3) year period.

Workers Compensation insurance with limits to comply with the requirements of the Texas Workers' Compensation Act	Statutory Limits
Employers Liability Insurance	$1,000,000.00 Each Accident $1,000,000.00 Disease – Each Employee $1,000,000.00 Disease – Policy Limit
Umbrella or Excess Liability insurance	$5,000,000.00 Each Occurrence $5,000,000.00 Aggregate

2. The required insurance must be written by companies acceptable to the Owner. The required insurance policies, except for professional liability insurance and worker's compensation insurance, shall and must name the Owner and Program Manager, its officials, employees, and officers as additional insureds. The required insurance policies shall contain no specific limitations on the coverage afforded the Additional Insureds.

3. All insurance and limits of liability required herein shall be in effect as of the earlier of the effective date of this Agreement or the date of the commencement of Architect's services in relation to the Project and shall remain in effect continuously throughout the term of this Agreement or for such longer periods as are required herein. In the case of Professional Liability insurance, the required coverage and limits of liability shall remain in effect for a minimum period of two (2) years following the completion of professional services hereunder.

4. If the insurance is written on a claims-made form, coverage shall be continuous (by renewal or extended reporting period) for not less than thirty—six (36) months following completion of this Agreement and acceptance by Owner

5. The Workers' Compensation insurance policy required herein shall contain a waiver of subrogation in favor of Owner, its officials, employees, and officers, whether by way of an approved endorsement or otherwise.

6. The Architect shall be responsible for verifying insurance coverage in the required amounts of all Consultants or other professionals employed by or used by the Architect and obtaining the required certificates of insurance before any such Consultants or other professionals begin work on the Project.

7. The insurance policies required by this Agreement shall be endorsed to reflect that the Architect's insurance coverage is primary over any other applicable insurance coverage held by Owner.

8. Insurance provided pursuant to this Section shall be considered a part of the Architect's basic services and shall not be a Reimbursable Expense.

9. Certificates of insurance acceptable to the Owner and naming the Owner, its officials, employees, and officers as additional insureds shall be filed with the Owner prior to commencement of the Architect's services or the services of consultants to the Architect or other professionals employed or used by Architect in relation to the Project, and thereafter upon renewal or replacement of each required *policy* of insurance. These certificates and the insurance policies required herein shall

contain a provision that coverages afforded under the policies will not be canceled, non-renewed, allowed to expire, or materially changed until at least 30 days' prior written notice has been given to the Owner.

10. The Architect shall notify Owner in writing and by certified mail or personal delivery, within ten (10) days after the Architect knew or should have known of any change that materially affects the provision of the required insurance coverages of any person providing services on the Project.

11. Because the Architect will be performing on-site services and observations, a copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Workers' Compensation Commission, or a coverage agreement (TWCC-81, TWCC-82, or TWCC-84), showing statutory worker's compensation coverage for the Architect and its employees providing services on the Project is required for the duration of the Project.

12. Duration of the Project includes the time from the beginning of the Work on the Project until the Architect's work on the Project has been completed and accepted by the Owner.

13. Employees providing services on the Project include all persons or entities *employed* or contracted by the Architect and performing all or part of the services the Architect has undertaken to perform on the Project, that furnishes persons to provide services on the Project.

14. If coverage period shown on the Architect's current certificate of coverage ends during the duration of the Project, the Architect must, prior to the end of the coverage period, file a new certificate of coverage with the Owner showing that coverage has been extended.

15. The Architect shall obtain from each person providing services on the Project, and provide to the Owner:
    a. .A certificate of coverage, prior to that person beginning work on the Project, so Owner will have on file certificates of coverage showing coverage for all persons providing services on the Project.
    b. No later than seven (7) days after receipt by the Architect, 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.

16. By signing this contract or providing or causing to be provided a certificate of coverage, the Architect is representing to the Owner that all employees of the Architect 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 a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the Architect to administrative penalties, criminal penalties, or other civil actions.

17. The Architect's failure to comply with any of the provisions in this Part 3 and its subparts is a material breach of contract by the Architect that entitles the Owner to immediately declare the contract void and terminate this Agreement.

18. All Engineers and other Consultants retained to work for Architect or retained at Architect's expense shall carry the same amounts under the same conditions as described in this Part 3 and its subparts.

GALVESTON INDEPENDENT SCHOOL DISTRICT SCHOOL DESIGN HANDBOOK

Exhibit D

TECHNICAL DESIGN GUIDELINES

TABLE OF CONTENTS

NOTE TO THE ARCHITECT - ENGINEER

These technical design guidelines have been prepared for your thorough review and application. You will find that the material presented will answer many questions that you and your consultants might have. Generally speaking, all architects and engineers (A/Es) are expected to meet the performance standards set forth in these guidelines; however, it is not intended that they limit the application of the professional's knowledge, experience, innovative design, or that they replace the normal thought process incumbent in the application of the A/E's standard of care. These guidelines are the minimum performance base requirements of products, systems and materials. If you wish to request deviations from these guidelines, a letter to the Owner stating your request for each specific change is required. Each deviation must be approved by the Owner prior to the implementation of the change to the project.

SECTION A - DOCUMENT FORMAT

A.1 CAD (Computer Aided Design)

A. A consideration in the selection of all architect and engineer consultants for the design of buildings and other facilities for the Owner will be whether or not the consultant has the capability to produce the drawings on a CAD system.

B. At the close of the project, the format for “as-built-drawings” and close out documentation will be searchable PDF files. The Owner will be provided a copy of the final CAD drawings in CAD format, a complete set of close out drawings in searchable .pdf format, and a complete set of all close-outs both in paper form in appropriately sized and labeled binders, and a copy of all close out documentation in searchable .pdf format.

C. The following standards are hereby established for providing design drawings, completed on AUTOCAD to the Owner

A.2 BIM (Building Information Modeling) Standards

A. Specification of a CAD file format for these Drawings does not limit which BIM application or software may be used for project development and execution. The A/E shall select BIM application and software and develop project designs using commonly accepted BIM software that is compatible with the latest International Alliance for Interoperability (IAI) Industry Foundation Class (IFC) standards. The A/E’s selected BIM application(s) and software(s) must be certified in the IFC Coordination View (2x3 or better. See www.iai-tech.org).

B. The Model shall include architectural, interior design, structural, mechanical, electrical, plumbing and fire protection systems and Facility Data, as applicable to the Interim Design package(s). The Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing.

C. All necessary plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules shall be included. All piping larger than 1.5” diameter shall be modeled.

A.3 Design Drawing Records

A. All "record" drawings will be provided to the Owner as described in Section One – Close-Out Documents.

B. Each professional discipline shall review relevant regulations pertaining to the release of electronic media to the Owner (and Contractors for the production of record drawings). It is the Owner’s intent to maintain Drawing File format files, not plot files. The Owner requests that all site plan and plan sheets from all disciplines are provided. Each Architectural firm shall review with their consultants the limitations on use and provide that information to the Owner. The limitations on use of drawings shall be confirmed in writing. Firms should contact the TBAE and comply with current regulations. The Texas State Board of Registration for Professional Engineers has established rules pertaining to their drawings and each firm shall comply with these regulations.

C. Provide acceptable CAD files. All files on the CD shall be AUTOCAD current version. All files shall include the sheet name in the file name and will be organized in accordance to drawings. For projects produced with BIM software, furnish the model and reference files.

D. All project construction drawings must be 100% CAD produced. Reference files must be permanently attached to the parent file. Blocks (symbols/cells) must be saved with the parent file. ASCII text file containing layer names and descriptions must accompany all CAD files. Layering system must allow easy access to "base plan" only configuration. Provide software to expand compressed files if disk compression is necessary. Files must not be password protected.

E. Layer Standards: AutoCAD shall have a layering system available for each drawing. Each design shall establish a consistent layering system for use throughout the project and provide the layering information to the Owner.

F. Specifications submittal: Specifications must be submitted in the current version of Microsoft Word.

SECTION B - GENERAL CONSIDERATIONS

B.1 General Considerations

A. These guidelines have been developed to assist the Architect/Engineer in the development of a quality project in a consistent, efficient and timely manner, incorporating experiences and lessons learned from past building improvement programs. These Design Guidelines have been developed to assist in communicating Owner's desires and requirements with regard to new construction, additions, and renovations. Application of the Guidelines to renovation projects will require professional skill and judgment and may require modification with written concurrence of the Owner Facilities Department on a project-by-project basis.

B. The guidelines are not intended to unduly limit or control opportunities for innovative design but rather to assist the project professionals in understanding certain planning requirements, design criteria, and concern regarding reduction of energy consumption. The Owner encourages architects and engineers to recommend and provide information regarding energy conservation and building envelope improvements, including HVAC and lighting.

C. The Architect/Engineer shall be responsible for the identification of all applicable, codes, standards, ordinances and the like and for the development of a project that satisfies the same.

D. Nevertheless, whenever the design of facilities varies from the requirements and considerations contained in the Guidelines, the Architect/Engineer shall inform the Owner. The Owner will approve or disapprove the variance.

E. Owner will conduct periodic reviews for the purpose of determining compliance with Owner criteria, guidelines, and instructions. All critical stages of construction shall be reviewed, approved and released by the appropriate Owner master tradesman prior to the progression of the next stage of construction. All installations shall meet the approval of appropriate Owner facilities departments regardless of the outcome of the city inspections.

F. A standard project sign will be provided as part of the bid price for all major construction projects.

G. Acceptable manufacturers for various components shall be noted for certain products as directed by Owner and/or these specifications. Except where noted “no substitutions”, these acceptable manufacturers are identified to establish a standard of quality for the Owner’s facilities. The architect and consultants should provide in Division 1 of the project manual the A/E’s provisions for determining equal products that are acceptable and equality should be established prior to the stated bid date. The Project Architect and/or the Project Engineer will specify any item or component not shown in the list.

H. To conform to environmental compliance, all products specified and incorporated in projects shall be "asbestos free”; paint and potable water plumbing shall be “lead free." All pressurized systems and containerized systems shall be C.F.C. free.

I. The Architect / Engineer shall require a statement from the Contractor which is to be submitted prior to substantial completion and prior to the Owner occupying the facility stating that, to the best of his knowledge, the project was constructed with products and materials which are “asbestos free” and “lead free.” This statement shall be accompanied by MSDS documents as applicable. Asbestos free certification of building materials, specifications, and drawings must be provided to the Owner prior to the date of occupancy.

J. The Architect will certify that specifications and building materials incorporated in the design and construction of the facility are both asbestos and lead free.

K. All Documents for Construction shall be sealed and stamped by the Professional A/E.

L. Substantial Completion: The Contractor shall prepare and submit a list of deficiency items as required by the General Conditions. In addition to the deficiency report, the Contractor shall provide copies of the complete TAB (Commissioning) report and verification that all repairs have been made and that the systems are operational. This list shall be submitted to the Architect a minimum of 7 days prior to the scheduled walk through. On the scheduled date of

the walk through and after receipt of the deficiency list (punch list) the Architect will inspect the project to determine the status of completion.

M. All waste lines shall be inspected by camera in the presence of a Owner representative prior to substantial completion. At the conclusion of satisfactory camera review, the contractor will smoke test the waste water system in the presence of the construction project supervisor and representatives from the Owner. Failed smoke test will be repeated after correction and repairs are made, again in the presence of the construction program supervisor and representatives from the Owner.

SECTION C - ARCHITECTURAL CRITERIA

C.1 Considerations during Early Design Phase:

A. The following outlines considerations, which should be included in early project analysis presentations. Development of building and site options should be presented in descending order of assumed priority.

B. General Program Analysis
   1. Recommended relationships of new components to each other.
   2. Recommended relationship of new components to existing ones.
   3. Problems in existing facilities in descending order of priority.
   4. Historic significance of existing structures as may be appropriate.

C. Building Design
   1. Judicious use of glass should be considered evaluating energy efficiency against natural lighting. Natural day lighting is encouraged where energy efficiency can be maintained or gained through the reduction of electrical lighting.
   2. Design is important to Owner so such items as mechanical equipment, trash dumpsters, etc should be placed out of sight as much as possible. Use of parapet walls must be considered during the design process. Verify additional screening requirements with the local authority having jurisdiction. Parapet walls will be designed with openings for ladder access and consideration for the evacuation of sewer gases.

D. For multi-story applications, verify that stairwell widths allow for the use of an "EVAC-CHAIR", www.evac-chair.com or similar approved evacuation apparatus.

SECTION D - STRUCTURAL CRITERIA

D.1 General Considerations

A. It is not the intent of these guidelines to limit the application of the professionals' knowledge, experience or innovative design. However structural design involving other than conventional foundation and building framing for any building must be reviewed and approved by Owner.

B. Determine finish floor elevations after review of floodplain requirements for the project location. Additionally, finish floor elevation must be determined after review of Base Flood Elevation (BFE) and storm surge elevations applicable to the project location, if any. The finish floor elevation must be 100-year BFE or surge elevation plus two feet. Finally, the structure must be designed to address storm surge requirements, scour, and impact loading among other ASCE requirements for the project location, if any. Refer to Section D.2 for sites located within Special Flood Hazard Areas as determined by FEMA.

C. Comply with provisions of the Texas Department of Insurance (TDI) Windstorm Inspection Program for sites in designated catastrophe areas, known as Texas′ First Tier Counties (Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kenedy, Kleberg, Matagorda, Nueces, Refugio, San Patricio, Willacy, and certain areas east of State Highwwy 146 in Harris County).

D. Use of pre-cast structural concrete, pre-stressed or post tensioned concrete, and systems utilizing excessive spans, or components/procedures unusual to the local building trades must be reviewed with and approved by Owner.

E. Design loading and deflection criteria shall, as a minimum, comply with requirements of the latest edition of the applicable building code and account for current and future probable loads for the design life of the structure.

F. Structural steel members should be designed in accordance with A.I.S.C. specifications for Design, Fabrication and Erection of Structural Steel for Buildings, the latest edition.

G. Reinforced concrete members should be designed in accordance with the American Concrete Institute, A.C.I. 318.

H. Where conflicts occur between the Building Code and the A.I.S.C/A.C.I. specifications, the Building Code shall govern.

I. All roofs should be designed with sufficient slope or camber to assure adequate drainage, taking into account ultimate long term deflection. Structure shall be designed with a slope of 1/4" per foot or as appropriate to the roofing system proposed.

J. Foundation design should be based on the Geotechnical Engineer's Report and the professional judgment of the design team.

K. In designing additions to existing buildings, consider the potential differential settlement between the buildings; particularly where new floors are adjacent to existing ones.

L. The structural engineer must carefully coordinate and account for the potential effect of anticipated deflection of the structural system as related to connection of non-structural walls, partitions and mechanical equipment. Minimize deflections.

M. The structural engineer must coordinate with the architectural and mechanical requirements of the project to assure adequate clearances, support, and proper dimensioning. Close attention should be given to the structural requirement imposed by mechanical equipment for openings, penetration of structural members, inertia pads, equipment weights, vibration and water piping of all types. Provide space in hallways for fan-powered mixing boxes and all piping.

N. The structural engineer should review and coordinate with the architectural drawings to assure provision has been made, as required, for lintels, shelf angles, floor depressions including those for refrigerator/freezer units, water proofing, miscellaneous framing members and anchors, properly sized to carry the intended load.

O. Consideration should be given to planned concentrated loads.

P. Structural Engineer shall review all masonry connections to the structural frame and design for

appropriate wind and lateral loads in attachment to structural frame of the building. Design all masonry panels and parapets for horizontal and vertical reinforcing, and review the architect's standard detailing for correct anchorage. The Owner considers assembly areas, including gymnasiums, to be essential facilities. Consider in design whether code minimum loads are adequate, and increase them where appropriate. The architect and engineer shall discuss increases with the Owner for approval and coordination.

Q. Do not use hanging or swing connections for beam ends relying on a single fastener or pin at expansion joints.

D.2 Design Considerations for Sites in Designated Special Flood Hazard Areas

A. General. New construction and substantial improvements shall be designed, constructed, connected, and anchored to resist flotation, collapse, or permanent lateral movement resulting from the action of hydrostatic, hydrodynamic, wind, and other loads during design flood, or lesser, conditions in accordance with requirements of ASCE 7 (Minimum Design Loads for Buildings or Other Structures), ASCE 24 (Flood Resistant Design and Construction), and the FEMA Coastal Construction Manual or in accordance with requirements approved by the AHJ.

B. Site Specific Criteria in accordance with ASCE 7 and ASCE 24

- Using the Effective FEMA Flood Rate Insurance Map (FIRM), identify the designated Flood Zone (Coastal High Hazard Area, V-Zone; Coastal A-Zone; and, A-Zones) and establish the Base Flood Elevation (BFE).
- Determine whether or not the site falls within or beyond the Limit of Moderate Wave Action (LiMWA) and establish the breaking wave height (less than 1.5 feet or between 1.5 feet and 3.0 feet).
- Coordinate with the Floodplain Administrator designated by the Authority Having Jurisdiction (AHJ) on whether or not a "Design Flood" is to be considered for design. If so, establish the Design Flood Elevation (DFE).
- Evaluate whether or not any AHJ Ordinances amend or supersede floodplain management provisions of the FEMA National Flood Insurance Program (NFIP), the FEMA Coastal Construction Manual, Chapter 5 of ASCE 7 (Minimum Design Loads for Buildings and Other Structures), or ASCE 24 (Flood Resistant Design and Construction).
- Identify the Risk Category (prior to IBC 2015 and ASCE 24-14) or the Flood Design Class (IBC 2015, ASCE 24-14 and later editions).
- Establish the Finished Floor Elevation of the lowest occupied level of the building or structure in accordance with the BFE or DFE.
- Determine Hydrostatic Loads, Hydrodynamic Loads, Wave Loads and Impact Loads (debris and any object transported by floodwaters) in accordance with Chapter 5 of ASCE 7.

C. Design and Construction in Flood Hazard Areas shall account for each of the following:

- Elevation of the structure relative to the DFE
- Foundations and geotechnical factors, including the effects of erosion and scour
- Damage to the structure up to and during the design flood
- Obstructions or enclosures below the DFE
- Structural connections
- Use of flood-damage resistant materials
- Floodproofing
- Utilities
- Means of egress

- Adverse impacts to other structures and property

SECTION E – SITE CRITERIA

Evaluate, design and provide the following as needed to develop the site and construct the project. Items shall be in accordance with all applicable private, local, state, and federal agency requirements including but not limited to TCEQ, FEMA, City of Galveston (Land Development Regulations of 2015), Galveston County, and TXDOT.

E.1 General Requirements

A. In general, Owner's construction budget includes all site development costs incurred, including parking, on site utilities, storm water detention, drainage facilities, erosion and sedimentation controls, curb cuts, drives, paved play areas, walks and sidewalks at the street, unloading zone, landscaping, and exterior furniture and equipment. Street, curb, gutters, and utility extension beyond the immediate site are generally not included in the construction budget but rather as a separate allocated budget amount.

B. It is therefore essential that economy of means be a prime consideration in designing site improvements such as pavements, walks, utility distances, drainage and other elements affected by layout and location.

C. There must also be concern for neighborhood scale, visual impact, aesthetics of proportion and color, good drainage, the safety and comfort of the students, and the satisfaction of parents and constituents.

D. Care should be taken to prevent sheet flow and drainage from intersecting with walk ways from student, staff and visitor parking lots.

E. If an addition results in an enclosed courtyard, provide drainage analysis, provide for primary and overflow drainage.

E.2 General Considerations

A. Environmentally sensitive features
- Wetlands
- Floodplains
- Threatened or endangered species

B. Soil conditions

C. Survey

E.3 Demolition

E.4 Site Plan

A. Ingress/egress – access drives

B. Parking

C. Loading bays / delivery areas

D. Sidewalks

E. ADA compliance

F. Green space

G. Walls, fencing, gates

H. Ticket booths

I. Landscaping

J. Site lighting

E.5 Utility Services

A. Sanitary service system

B. Water supply – domestic, fire, irrigation

C. Electric

D. Gas

E. Private
   - Cable / internet
   - Phone

E.6 Drainage

A. Complete drainage system with collection, best management practices, treatment, detention, and outfall as applicable.

B. Rainfall design values shall be based on NOAA Atlas 14 data

E.7 Storm Water Pollution Prevention

E.8 Traffic Impacts Analysis

A. Number of entrances/exits, drives, and traffic direction to provide capacity needed

B. Traffic signals

C. Signage

E.9 Permitting

A. Site Analysis of Existing Conditions
   1. For additions, consider sprinkler (fire) vs. horizontal and vertical access, fire lane, and hydrant.
   2. Traffic (patterns, noise, danger, density of school site); special considerations regarding safety of children; adequate parking.
   3. Adequate service area.
   4. Location and size of existing utilities.
   5. Relationship of building to surrounding neighborhood.
   6. Easement restrictions.
   7. Site utilization during construction (contractor considerations, e.g., fence, access, etc.) temporary building location/relocation.
   8. Location and size of all existing permanent and transportable structures.
   9. Platting and zoning requirements.
   10. Landscaping requirements.

DIVISION 01 -- GENERAL REQUIREMENTS

1.1 Submittals

A. Submittal procedures shall be in accordance with the Owner Guidelines and Procedures and General Conditions
   1. Architect shall provide appropriate requirements in the project manual requesting the following MSDS sheets:
      a) Mastics, glues, adhesive regardless of application
      b) Ceiling Tile
      c) VCT Floor Tile
      d) Thermal Insulation (excluding fiberglass, foam, rubber)
      e) Sprayed on or troweled on fireproofing or decorative finish
      f) Gypsum board, tape and mud compound
      g) Sealants (used on the interior of the building)
      h) Fire doors (insulating material)
   2. MSDS sheets shall be submitted to the Owner with the Close-Out Documents.
   3. The architect shall submit the following submittals for review with Owner for comments and/or approval. Submittals shall be reviewed and or approved by the design professional prior to submitting one copy to Owner. The specification sections include:
      a) Section 06 4100 - Architectural Wood Casework
      b) Section 08 7100 - Door Hardware
      c) Section 09 6566 - Resilient Athletic Flooring
      d) Section 10 1200 - Display Case
      e) Section 10 1414 - Exterior Signage
      f) Section 10 1415 - Interior Signage
      g) Section 11 3100 - Residential Appliances
      h) Section 11 4000 - Foodservice Equipment
      i) Section 11 6623 - Gymnasium Equipment
      j) Section 11 6643 - Interior Scoreboards
      k) Section 11 6800 - Playfield Equipment and Structures
      l) Section 12 3553.19 - Wood Laboratory Casework
      m) Section 14 2010 - Passenger Elevators
      n) Section 22 4000 - Plumbing Fixtures
      o) Section 23 7000 - Heating, Ventilating and Air Conditioning
      p) Section 23 9000 - DDC Energy Management System
      q) Section 26 2416 - Panelboards
      r) Section 26 5113 - Interior Lighting Fixtures, Lamps and Ballast
      s) Division 27 - Communications
      t) Division 28 - Electronic Safety and Security
      u) Section 31 3116 - Termite Control
      v) Section 32 8000 - Irrigation
      w) Section 32 9000 - Planting

1.2 Substitutions

A. Reference General Conditions AIA-A201.

1.3 Close-out Documents

A. Survey firm to provide Owner, in addition to other copies, an AUTOCAD file, for use in Owner CAD system, each drawing file shall reference the sheet name in the electronic file name.

B. The Architect/Engineer shall assure the Owner that requirements for Warranties, Operation & Maintenance Manuals, Record Drawings, MSDS documents, Attic Stock, etc. are clearly identified in the contract documents for Owner use. MSDS sheets shall be included in an individual binder. A complete electronic back up of all MSDS and close out documents will be provided electronically utilizing PDF files.

C. The following Closeout & Record Documents shall be provided to the Owner upon completion of the project:
   1. From the Contractor:
      a) One (1) original hard copy of the project record drawings and project manual.
      b) One (1) digital copy of the project record drawings and project manual in Adobe "pdf" searchable format. The digital copy shall be set up with each section of the specifications, and each drawing sheet indexed. The digital shall be set up to allow editing.
      c) One (1) original hard copy of closeout documents designated by the Owner.
      d) One (1) digital copy of closeout documents designated by the Owner in Adobe "pdf" format.
      e) From the Architect:
      f) One (1) digital copy of the Contract Drawings, including all site and floor plan sheets from all disciplines in Acad "dwg" format.
      g) One (1) digital copy of the Project Manual, Specifications and Addenda in Microsoft Word "doc" format.

1.4 Substantial Completion

A. Operational training of all systems and equipment is required for Owner Staff.

B. Two sessions are required. The first session shall include Owner maintenance personnel and shall be completed prior to substantial completion being executed. The second session shall be provided once the final facility staff is available.

1.5 Pay Applications

A. Project Manual shall indicate a 5% Retainage is to be used for Owner projects and indicted as such in the executed AIA, A101 Agreement (5.1.6). This section of the Agreement is to be filled in prior to inserting the AIA, A101 Document into the construction specifications for Owner projects.

DIVISION 02 -- EXISTING CONDITIONS

2.1 Demolition

A. All demolition shall be performed under the guideline of the current edition of the 29 CFR 1926 - U.S. Occupational Safety and Health Standards and NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

B. Included with the demolition proposal, Contractor shall provide a written declaration of items that will be salvaged from the site. Each item shall be itemized and a monetary value assigned. Credit value of salvaged items shall be included in calculation of proposal. Declaration shall be reviewed by the Owner to determine that the declaration complies with state requirements and local Board policy in regards to disposing of public property.

C. All items called for on the drawings to be salvaged, removed and relocated shall be inventoried, removed and stored until such time as they are to be installed in their new location. The inventory list shall be given to the Owner and shall include an itemized quantities, descriptions and condition of each item. These items are considered to be in good operating condition at the time the contract is signed, and shall remain the property of Owner. These items shall be properly protected by the contractor and removed by him, complete, including all appurtenances and reinstalled in their new location in good working order with any modifications called for by the drawings.

DIVISION 03 -- CONCRETE

3.1 References

A. American Concrete Institute:
   1. ACI 211.1, Recommended Practice for Selecting Proportions for Normal and Heavyweight

Concrete.
2. ACI 214, Recommended Practice for Evaluation of Strength Test Results of Concrete.
3. ACI 301, Specifications for Structural Concrete for Buildings.
4. ACI 304, Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
5. ACI 305, Hot Weather Concreting.
6. ACI 306, Cold Weather Concreting.
7. ACI 318, Building Code Requirements for Reinforced Concrete.

B. SP15, Field Reference Manual, Specifications for Structural Concrete for Buildings with Selected ACI and ASTM References.

3.2 Concrete Formwork

A. Provide the maximum reuse of forms for all cast-in-place concrete work. This requires repetition of design features throughout the project.

3.3 Cast-in-Place Concrete

A. Use of exposed concrete as a "finish" material must have prior written approval from Owner.

B. Standardize bar grades, sizes, and lengths as far as possible. Reinforcing steel to be new billet steel.

C. Maintain column cross-sectional areas constant for at least two stories. When necessary, change column thickness only with an inside face setback.

D. Minimal dimensions of column and beam sides should be in multiples of 2 inches.

E. Provide keyways at all construction joints and include continuous water stops wherever subjected to hydrostatic pressures.

F. Slope the top of all exposed concrete surfaces with drip grooving underneath all cantilevered leading edges.

G. Curing compounds used at existing building sites should contain not more than 10% solvents.

H. All below grade exterior wall pipe penetrations shall be made with a special cast iron flange to mechanical joint wall castings of matching length with integral intermediate flange. Sleeve and curb all floor slab openings.

I. Exposed concrete grade beams shall not exceed 1'-0" above finished grade.

3.4 Other Materials

A. Under Slab (Vapor Barrier) Membrane:
1. Comply with ASTM E1745 Class A or better.
2. Thickness to be not less than15 mils
3. Provide vapor barriers under all building foundations.

3.5 Insulating Concrete Forms

A. Insulating concrete wall form system shall consist of two opposing panels of expanded polystyrene (EPS) having a uniform minimum density of 1.5 pounds per cubic foot (pcf) connected by steel, composite or high-density polypropylene cross ties or webs.

B. The use of ICF Wall System shall be reviewed with the Owner before commencement of design.

C. ICF Wall Systems may be considered for all areas of the building except for Gymnasiums, Locker rooms or other areas where the interior wall finish is subject to high abuse.

DIVISION 04 -- MASONRY

4.1 References

A. ASTM C 67 - Sampling and Testing Brick and Structural Clay Tile

B. ASTM C 150 - Portland Cement

C. ASTM C 216 - Facing Brick
D. ASTM C 270 - Mortar for Unit Masonry
E. ANSI A41.1 - Building Code Requirements for Masonry

4.2 Unit Masonry

A. When face brick is to be used, at least two that are equal should be specified in lieu of specifying by allowance. Also, consideration should be given to compatibility of the brick with other structures on campus as well as the surrounding neighborhood; durability and availability for current projects as well as future additions should be considered as well. When attempting to match an existing brick, the manufacturer and manufacturer's number of the matching brick should be specified. Brick selection must be approved by Owner.
B. Use tooled/concave joint on brick.
C. Designs requiring special shapes or cuts of brick may be used if used in moderation.
D. Masonry roof parapets shall have their roof face protected. Typically, this condition will be addressed as part of the roof flashing system. Exterior plaster or gypsum sheathing systems are not acceptable.
E. All masonry walls shall have expansion/contraction joints.
F. Joints for expansion, contraction, and building movement shall be sealed to prevent weather and water from penetrating to the interior of the building. All vertical and horizontal joints shall be drained to daylight above all horizontal surfaces. There shall be both a primary (architectural) weather seal and a secondary weather seal where water and moisture could penetrate the wall.
G. Through wall flashing shall be provided at wall caps, window heads, shelf angles, base bearing, etc.
H. Masonry anchors to structural steel framing shall be of flexible design, i.e., wire tie strap anchors; corrugated metal ties are not acceptable.
I. Provide appropriate through wall flashing and appropriate "weep" holes to provide drainage at cavity walls.
J. Avoid masonry units with high metallic content to minimize efflorescence.
K. Follow recommended practice and detailing of the Technical Notes on Brick Construction, as published by the Brick Institute of America, for brick and masonry construction.

DIVISION 05 -- METALS

5.1 References

A. References - STRUCTURAL STEEL
   1. American Institute of Steel Construction, AISC:
   2. AISC Manual of Steel Construction.
   3. Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
   4. Code of Standard Practice for Steel Buildings and Bridges.
   5. Structural Joints using ASTM A325 or A490 Bolts.
   6. References - STEEL JOISTS
   7. Steel Joint Institute, SJI:
   8. Standard Specifications for Open Web Steel Joists, K-Series; and Standard Load Table, Open Web Steel Joists, K-Series.
   9. Recommended Code of Standard Practice for Steel Joists and Joist Girders.
B. References - STEEL DECK/COLD FORMED METAL FRAMING
   1. Steel Deck Institute (SDI), Specifications and Commentary for Steel Roof Deck.
   2. American Iron and Steel Institute (AISI), Specification for the Design of Cold-Formed Steel Structural Members.

C. References - METAL FABRICATIONS/RAILINGS
   1. ASTM A 47 - Malleable Iron Castings.
   2. ASTM A 53 - Welded and Seamless Steel Pipe.
   3. ASTM A 501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
   4. AWS D1.1- Structural Welding Code

5.2 Structural Steel

A. Designs requiring full moment connections should be avoided but may be incorporated if the design is more practical.

B. Select beams for economy of section, however, maintain web thickness as necessary to facilitate detailing.

C. Exposed structural steel shall be galvanized and receive a paint finish.

5.3 Metal Roof Decking

A. Gauge of metal roof decking shall be specified and material specified as factory painted finish unless approved by Owner to be galvanized. Provide proper detailing to limit the amount of exposed steel appearance. Coordinate required deck gauge with roof system. Metal decks with mechanically fastened insulation boards must be 22 gauge or heavier.

B. Metal decking for concrete slab form should be of sufficient gauge to support concrete placement without buckling or deforming from wheelbarrow or other traffic.

C. Flutes of metal decking supporting rigid insulation should be of proper size to accommodate the span capability of the specified insulation.

5.4 Miscellaneous Metals

A. Miscellaneous metal fabrications should utilize readily available local sections. Do not use aluminum, copper, brass (or other metals that have salvage value) in exterior applications.

B. Exterior ferrous metals used for handrails, bollards, ladders, etc., are to be primed and receive a final painted finish. Exterior ferrous metals that are part of the building elements are to have low maintenance coatings.

DIVISION 06 -- WOOD, PLASTICS, AND COMPOSITES

6.1 References

A. APA - Plywood Construction Guide.

B. AWPA C20 - Structural Lumber, Fire-Retardant Treatment by Pressure Processes.

C. AWPA C27 - Plywood, Fire-Retardant Treatment by Pressure Processes.

D. PS1 - Construction and Industrial Plywood.

E. PS20 - American Softwood Lumber Standard.

F. NFPA - National Design Specification for Stress Grade Lumber and its Fastening.

G. Quality Standards: Perform finish carpentry and casework work in accordance with AWI Quality Standards.
   1. Standing and Running Trim: AWI Section 300.
   2. Shelving: AWI Section 600.
   3. Miscellaneous Work: AWI Section 700.
   4. Casework and Countertops: AWI Section 400 A, B, and C.

6.2 Rough Carpentry

A. Provide appropriate blocking for all specialty items (marker boards, projection screens, lockers, toilet partitions, toilet accessories, etc.).

6.3 Finish Carpentry & Casework

A. Fixtures and Casework - Use Plastic Laminate casework and countertops where applicable.

When using channel bracketed shelving, be sure the weight and size of the channels and brackets are commensurate with the loading to be applied on the shelves and that partition construction, bracing on top, and holding provisions are adequate.

B. Cabinets shall be constructed of ¾" plywood for doors, drawers, shelves, drawer sides. Drawer bottoms may be ¼" plywood. Particleboard, MDF is not allowed.

C. All cabinet doors 6' tall and over shall be constructed of 1" plywood.

D. Storage shelving - Provide utility grade (painted) wood shelving in book rooms.

E. Provide built-in casework at kitchen manger's office.

F. All cabinet locks shall be keyed to the Owner's master keying system. Provide Marshall Best lock cores on all teachers' storage cabinets and wardrobe units. All cabinets in counselors office (test storage), and clinic shall have Marshall Best lock cores.

G. Provide (1) Pr. 5-knuckle hinges at typical cabinet doors and (2-1/2) Pr. 5-knuckle hinges and tall cabinet and teacher wardrobe doors.

H. Owner standard shall be factory finished casework.

I. Carpet/ VCT flooring to terminate at perimeter of casework. Floor finish shall not extend under casework.

J. Stand-alone wooden handrails are not preferred. Handrails shall be rigid construction made of metal. Wooden hand rails can be used when design includes strong metal undercarriage to support rails. Design of stand-alone wooden handrails shall be review by the Owner.

DIVISION 07 -- THERMAL AND MOISTURE PROTECTION

7.1 References

A. FM - Roof Assembly Classifications.

B. NRCA - Manual or Roof Maintenance and Roof Repair.

C. NRCA - Roofing and Waterproofing Manual

D. UL - Fire Hazard Classifications.

E. SMACNA - Architectural Sheet Metal Manual

7.2 Insulation

A. Where an upper floor level extends over open porches or otherwise exposed to the weather, insulation should be provided to protect the conditioned space above.

7.3 Roofing

A. All roofs should be designed as low slope with a minimum of ¼" per foot slope. Slope all roofs to the perimeter of the building. Avoid building designs with multiple roof levels or changes in levels, intersections of expansion joints and penetrating walls, clerestory window and equipment curbs of inadequate height, roof deflections that cause slopes away from drainage, sheet drainage onto walls, unsuccessful detailing, or construction of roof edge gravel stops and undersized drains. No drainage onto walls from adjacent roof areas shall be permitted except under emergency overflow conditions.

B. Design buildings to provide less complicated, simple roof geometry. Roof decks shall have appropriate load carrying capacity, be insulated to comply with energy conservation considerations, and shall be corrosion resistant. The acceptable roof systems shall be a multi-ply thermoplastic membrane roofing system where there is HVAC RTU equipment on the majority of the roof and a single ply system when geothermal systems or air handlers are used in conjunction with a chill water system limiting or eliminating equipment on the roof. If roof slopes require changes from this roof system, an approved alternate roof system will be selected. Metal roofs are not preferred by the Owner, but can be approved for limited use where there are no mechanical systems on or passing through this roof. All roof systems shall

have a 20-year no dollar limit (NDL) system warranty as reviewed by the Owner. 15 and 20 year (NDLs) will be considered on single ply roofing. Architect will assist Owner in pre-qualifying single ply roofing sub-contractors for consideration by General Contractor.

C. Copper, brass and aluminum flashings and gravel stops are to be avoided due to excessively high cost and the problems related to vandalism.

D. Drainage of roofs shall be accomplished with appropriately placed roof drains and overflow scuppers or gutters and downspouts along the perimeter of the building rather than merely sheet flow to scuppers or "over-the-side" onto walls. Avoid collection of downspouts above the ceiling, routing each instead to the exterior and then to a collection system. All roof drainage shall be collected in an underground drain system and diverted away from the building. All drainage piping shall be inspected by camera in the presence of a Owner representative. A video shall be collected during the inspection and one (1) copy shall be provided to the Owner. Design of steep pitched roofs only when necessary or appropriate will be considered; design must be submitted for review and approval. On new construction, lightweight cellular insulating concrete will be considered as an acceptable system component if accepted by the roof membrane manufacturer. This acceptance will be confirmed on a case-by-case basis in the review procedure with the Owner.

E. Roof assemblies shall consist of a factory painted steel deck topped with minimum of two layers of rigid insulation (per NRCA and manufacturer recommendations), properly fastened and protected from interior fire exposure where required by the assembly rating. Roof assemblies shall be sloped to drain per local authority having jurisdiction, but in no case less than ¼” per ft. for all other low-slope systems. This will include new and Re-roofing applications. When standing seam metal roofing is used, materials testing firm shall inspect all flashing joints and seams; rigid non-hygroscopic insulation shall be fastened to the underside of the roof, but protected on the interior surface as required by building code. Roof and deck assemblies shall comply with UL fire resistance requirements as required by building code or local authority having jurisdiction.

F. Roof systems shall have not less than a UL Class A fire rating and participate in the UL follow-up service to label materials at the jobsite. Roof systems shall be installed to ASCE 7 requirements for the height of building, including additional corner and perimeter fasteners. Perimeter treatment of metal and nailer anchorages shall follow FM 1-49 for the zone and height of building. Roof systems shall be FM 1-90 or greater approved assembly.

G. Mechanical equipment on the roof should be designed to be set on a full curb. If not on a full curb and supported by framework or equipment supports, minimum height of curb shall be 12” off of completed roof membrane. Provide additional sloped insulation below framework and between equipment support curbs to remove water from below units. Provide taper strip on all sides at all full curbed equipment to prevent water standing against flashings.

H. Test cuts should be performed only where there is reason to suspect that less than proper installation procedures have been used or materials have been shorted.

I. Materials used for patching and repairing existing roofs shall be compatible with existing materials (i.e., pitch, asphalt).

J. For re-roofing existing buildings, contact the Owner for re-roofing considerations and guidelines for the specific facility.

K. All roof systems shall be reviewed on a Qualifications Form prior to the bid opening. Roof systems not specified or listed as acceptable substitutions in the contract documents shall be deemed non-conforming bids.

L. Listed materials, when part of an acceptable roofing system, shall meet the requirements of the material standards specified.

M. Comply with acceptable roofing system manufacturer's recommendations for component roofing system materials. Materials listed below are for general reference only. Selection of roof system components may vary to conform to overall system design.

1. Asphalts:

a) Low Slope: ASTM D 312 Type I
b) Steep: ASTM D 312 Type III
c) Special Steep: ASTM D 312 Type IV

2. Bitumen:
   a) Bitumen ASTM D 450 Type III, low fume
   b) Pitch ASTM D 450 Type I
3. Felts:
   a) Organic felt ASTM D 227
   b) Fiberglass felt ASTM D 4990
4. Base Sheets:
   a) Asphalt coated organic base sheet ASTM D 2626 (non perforated)
   b) Asphalt coated fiberglass base sheet ASTM D 4601 Type II
5. Bitumen Control:
   a) Sheet metal stops at the roof surface are required for built-up systems at drains and scuppers to prevent bitumen flood coat migration into rainwater conductors.
   b) Bitumen control is also required at gravel stops, drains, and penetrations. Metal bitumen dams (installed below the roofing piles), non-perforated organic felt (2 plies), or a polyester reinforced flashing are required for Coal Tar roof applications. Follow other manufacturer recommendations as needed to prevent bitumen drippage.
   c) Verify fascia and roof details correspond to those required to prevent migration, do not reuse generic asphalt roof system details without prior modification.
6. Insulations:
   a) Perlite, standard board sizes, thickness varies, uncoated.
      1) Tapered perlite, min. installed thickness 1/4" in.
      2) Manufacturers: As approved by roof membrane manufacturer for system warranty.
7. Isocyanurate (ISO):
   a) Polyisocyanurate rigid foam, closed cell core bonded to heavy-duty glass fiber mat facers.
   b) Thickness: 3 1/2”
8. Moisture Relief Vents:
   a) Metal spun aluminum one-way vents.
   b) Manufacturer: Portals Plus, Inc.
   c) No plastic or PVC vents are permitted.
9. System Warranties:
   a) A 20-year, No Dollar Limit, system warranty, including all insulations, cants, and accessories furnished, covering workmanship and materials, is required for all roof systems. The Owner must approve warranty form. Specific endorsements of usual warranties by properly executed Exhibit are acceptable. A separate 5-year workmanship and materials warranty from the installing roof contractor, including sheet metals, flashings, curbs, etc. is required.
   b) Source: As approved by roof membrane manufacturer for system warranty; Firestone, Manville, TAMKO, GAF Asphalt Systems Barrett, Coal Tar Pitch Sarnafil - Single Ply PVC 60 mil

N. Single Ply Roofing - 60 mil PVC System fully adhered. Sarnafil 3327-15 Application adhered to approved substrate using Sarnacol Adhesive.

O. Attic spaces (especially large spaces such as those under sloping roofs) should be semi-conditioned to prevent freezing of water of sprinkler piping. This may be accomplished through the use of thermostat controlled unit heater or heat strips.

7.4 Roof Accessories

A. Provide walkways as required by roof system manufacturer around all sides of roof mounted equipment units requiring periodic access and to access other roof levels. Walkways shall be provided or approved by the manufacturer for inclusion in the required roof system warranty.

B. Provide internal ladders to all roof areas.

C. All multi-level roofs shall have permanently attached ladders between levels with height differentials of 30 inches or greater.

7.5 Sheet Metal Flashing and Trim

A. Exposed sheet metal flashing and/or trim to be prefinished with either Kynar 500 or Duranar 200 or equal as approved by Owner. Field painted galvanized elements are not acceptable.

7.6 Selection Criteria

A. Slope and Type
1. 1/4 in per 12 in: (All slopes measured from dead level.)
a) Recommended:
1) 4 ply built-up, aggregate surfaced roof system, organic or fiberglass felts, no substitutions. (High Traffic Zones)
2) 4 ply BUR/MOD consisting of three plies of fiberglass felts and a 250gm mat polyester reinforced SBS FR cap sheet, white granulated. (High Traffic Zones)
3) 60 mil PVC - Fully Adhered (Low Traffic Zones)
b) Manufacturers:
1) BUR-Asphalt:
a) Manville
b) Tamko
c) GAF
d) Firestone
2) Single Ply:
(a) Sarnafil
2. >1/4 in to 1/2 in per 12 in: (All slopes measured from dead level.)
a) Recommended:
1) Two ply modified bitumen roof system, glass reinforced, granular protected top ply, installed with steep roof asphalt to mechanically fastened insulation or nailed G2 base sheet.
b) Manufacturers:
1) Modified Bitumen:
a) Manville
b) Tamko
c) GAF
d) Firestone
3. Dead Level, 0/12 slopes, Restoration Repairs of Coal Tar Pitch Systems
a) Recommended:
1) Ram Cold Tar Roof Compound
b) Manufacturers:
1) Barrett

DIVISION 08 -- OPENINGS

8.1 References

A. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.

B. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers

C. UL 10 C - Standard for Positive Pressure Fire Tests of Door Assemblies - Underwriters Laboratory.

D. UL 1784 - Standard for Air Leakage Tests of Door Assemblies - Underwriters Laboratory.

E. NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors," of National Wood

Window and Door Association.

F. AWI Quality Standard: "Architectural Woodwork Quality Standard," including Section 1300 "Architectural Flush Doors," of Architectural Woodwork Institute (AWI for grade of door, core construction, finish, and other requirements exceeding those of NWWDA quality standard).

G. ANSI/BHMA A156.18 - American National Standard for Materials and Finishes - American National Standards Institute/Builders Hardware Manufacturers Association

8.2 General

A. Door height shall be 7'-0" typically.

B. Comply with applicable provision of N.F.P.A.-80, including installation, where applicable (for required label construction.)

8.3 Doors and Frames

A. At exterior entrances use steel stiffened doors with Foamed Core metal doors, Honeycomb core doors are unacceptable. Doors shall be 16 gauge steel, with 16 gauge steel frames (interior), 14 gauge steel (exterior). Aluminum doors and frames are not permitted other than the main store front entry to the building, performing arts center, and completion athletic entrance. Where aluminum frames are used, aluminum mullions must be re-enforced or replaced with steel. All other hallway and student access areas shall utilize steel doors, frames, and mullions. Steel doors and frames are preferred. All exterior doors shall seal tightly and not allow insect pests easy access to the buildings.

B. Exterior hollow metal doors and frames shall be primed and painted.

C. Exterior aluminum frames shall be provided with thermal break construction.

D. Doors in special locations such as kitchens, laundries, custodial closets, auditoriums, gymnasiums, electrical vaults, water heater rooms, etc. shall be designed to allow for the removal of equipment. Double doors in these areas will be provided with keyed mullion on the MARSHALL BEST lock core system.

E. Plastic laminate is an acceptable finish for interior doors.

F. Use structural composite lumber (SCL) core wood doors unless fire rating requires the use of mineral core doors. Core shall be bonded to hardwood stiles and mill option rails. Mineral core veneer doors should have a minimum of 1/2” stile on hinge edge of door. Veneer shall be 5 ply. Exterior wood doors are not allowed.

G. Stops for glass lights, wood louvers, etc., should be capable of being removed and reinstalled, using vandal proof fasteners.

H. Aluminum storefronts and entry doors may be considered at the elementary building level. Hollow metal is preferred at intermediate, middle and high schools (other than areas specified in section 8.03, A). Aluminum doors and frames and curtain wall and aluminum window frames may be used on entry areas of the Building.

8.4 Windows

A. Aluminum window glazing systems are to have an anodized or paint system applied to resist deterioration.

B. Fill-in of window walls of existing buildings should use a product similar to MAPES Industries porcelain on aluminum architectural building panels with 2.25" polystyrene core (R-11.97) or equal.

C. Glass adjacent to and within areas subject to human impact, and where required by code, shall be tempered.

D. Operable windows are to only be provided where required by life safety or building codes and as approved by the Owner.

E. All exterior windows shall be provided with thermal break construction.

F. When windows are to be repaired or replaced, they should be replaced with single glazed aluminum frame units, or repaired. Finish and design to be compatible with existing windows.

8.5 Finish Hardware

A. For surface mounted continuous geared hinges, door closers and exit devices, use steel sex nuts and bolts instead of screw fastening.

B. Provide weather-stripping, drip caps, and thresholds at all exterior doors.

C. All fire labeled door hardware to meet all Underwriters Laboratory and NFPA 80 fire label requirements.

D. All pairs of fire labeled doors that require rigid overlapping astragals must have coordinators.

E. All wood or hollow metal frames to have silencers.
   1. Single doors up to 8'0": 3 each.
   2. Single doors over 8'0": 4 each.
   3. Pair Doors: 2 each.

F. Hinges:
   1. Use threaded-to-the-head screws for edge mounted hinges.
   2. All hinges to be five knuckle.
   3. All hinges on doors where the hinge knuckle and the key cylinder are on the same door face to have non-removable pins.
   4. All hinges on doors with door closers to have ball bearings.
   5. All doors over 3'0" wide to have 5" hinges.
   6. All doors over 8'0" high to have four hinges per leaf.
   7. Hinges will be sized for thickness of door according to manufacturers' recommendations.
   8. All high-frequency openings to have heavy-weight ball-bearing hinges.
   9. Classroom doors will open 180 degrees to not obstruct the hallway when open.

G. Door closers:
   1. Check code requirements - building corridor to occupied space.
   2. All closers shall be LCN (NO SUBSTITUTIONS) to maintain Owner standards and mounted with steel sex bolts and machine threaded screws. Self-reaming and self-tapping (SRT) screws are prohibited.
   3. All exterior doors to have closers mounted on the inside of the door with solid forged extra duty knuckle and parallel arm design (EDA). Interior, High frequency doors requiring parallel arm mounting shall also be provided with EDA arms.
   4. All interior doors with closers must have the closers mounted on the opposite side of public area. Closers on doors in vestibules shall be mounted inside the vestibule.
   5. All exterior and other high frequency use doors to have Heavy-duty, 1-1/2” diameter bore factory non-sized closers with full spring adjustments allowing on the door adjustment; power range size 1 through 6, along with back check feature. Interior low frequency doors requiring door closer to have 1-1/8” bore, non-sized, and non-handed door closers with full spring adjustments; power range size 1 through 6, along with backcheck feature. No concealed closers are to be used, except for double-acting closers. Spring hinges are not acceptable.
   6. Exterior, high frequency, and heavy duty closers shall be independently certified to a minimum of 10,000,000 operational cycles in accordance with ANSI testing requirements to insure long life span and reduced maintenance cost.
   7. Provide temperature stable constant viscosity hydraulic fluid with temperature range of -30° F to 120° to eliminate seasonal adjustments.
   8. Where closers are required, avoid concealed type due to increased maintenance problems. If concealed closers are required, use LCN Heavy Duty 6030 Series for double-action doors only. Do not use units where spindle acts as an arm or pivot. All closers shall be through bolted
   9. Provide stop arms, floor stops, bumpers, or other high traffic door swing limit devices to prevent closer and door damage by door overtravel. Do not provide sidewalk mounted door hold-open posts at exterior doors.

H. Exit Devices & Mullions:

1. All exit devices shall be Von Duprin (NO SUBSTITUTIONS) to maintain Owner standards and mounted with steel sex bolts.
2. All exit devices shall be approved rim devices unless other device types are required for fire rating or where doors are held open mechanically or electronically.
3. All exit doors to have non-keyed removable mullions with stabilizers.
4. If at all possible, all pairs of doors requiring exit devices shall have removable mullions. Main delivery area shall have removable keyed mullions.
5. Do not use Cross Bar Design. Provide “touch bar” with “T” design to prevent finger pinching. Touch pad shall not extend full length of exit device for safety reasons. All latches shall be dead latching type with roller strikes.
6. Specify fluid damper on device to absorb shock and noise.
7. Provide hex key dogging to lock push pad down.
8. At all interior doors scheduled to receive exit devices with lever trim, provide a double cylinder function that will allow locking of outside lever from push side of door.

I. Locksets, Latchsets and Deadlocks:
1. The Architect shall be responsible for determining the function of each lock installed, for example, classroom function, storage room function, corridor function, office function and so forth. All locksets for classrooms shall include an intruder deterring function equal to Best Access Systems IND function with cylinders on each side of the door.
2. Locksets, Latchsets, and Dead locks shall be by Marshall Best System, with Marshall Best System, removable cores. (NO SUBSTITUTIONS)
3. All locksets, latchsets, and dead locks to be of mortise style ANSI A156.13, Series 1000, Grade 1 Operational, Grade 2 Security.
4. All locksets, latchsets, and dead locks to have wrought boxes for installation behind strikes.
5. All public restrooms shall have push-pull plates with separate deadlocks.
6. All exterior handles to be fixed to spindles, preventing loss of security.
7. ADA Requirement: no knobs will be used in any new work; only levers.
8. Type of cylinders to be determined prior to bidding.
9. Refer to Division 14 for elevator keying requirements.
10. Refer to Division 6 for cabinet keying requirements.
11. All overhead doors, aluminum doors, display cases, or any item that is lockable is scheduled to receive a Marshall Best cylinder and core and shall be master keyed.
12. Provide a "Schlage Electronics 653-141-L2-SF-626" keyswitch access device by Schlage for the security vestibules. This device is to receive "Marshall Best" cylinders and cores and be operable from the main office receptionist desk.

J. Pivots and Floor Closers
1. Use only if no other method of closing doors exists (arch-topped doors, etc.).
2. Use only heavy-duty, cast iron closers.
3. All doors 8'5" and under to have one intermediate pivot.
4. All doors over 8'6" tall to have two intermediate pivots.

K. Holders:
1. Overhead Type shall be made of heavy stainless steel construction at exterior, heavy steel construction at interior; the sliding member in channel shall be bronze and have accessible adjustment screw to regulate hold-open tension. Surface-mounted channels must be applied to the door by sex bolts. All shock blocks, components, and end caps shall be of metallic material. NO PLASTIC.

L. Stops:
1. Floor type stops shall be made of cast bronze or brass with a solid base and fastened to the floor. Locate in areas to avoid becoming a tripping hazard or a fulcrum in a lever system, whereby damage could occur to door, frame, and/or hardware.
2. Special screw studs shall extend through the rubber into top of housing to prevent removal of rubber bumper.

3. Avoid use of wall type stops except at masonry walls unless it is known that solid blocking will exist for mounting of wall stops.
4. Wall type stops shall be made of cast brass or bronze with a high grade rubber bumper securely held to mounting backplate.
5. All above items to be of one manufacturer.
6. Pedestal type doorstops shall be prohibited.

M. Keying:
1. The keying system for new buildings with expansion capabilities for future additions will be accomplished by the Owner maintenance department.
2. The keying schedule, number of master keys, room keys and so forth will be determined and provided by the Owner maintenance department to Marshall Best System.
3. The Owner maintenance department will be responsible for designing the keying system, installing permanent cores and providing the required keys to the building principal. Construction cores will be returned to general contractor upon completion of permanent core installation. Under no circumstances will lock pinning and key code be released outside the Owner.
4. The Contractor shall be responsible for supplying and delivering all keys, other than Marshall Best System removable core keys, to the Owner Maintenance Department locksmith. This includes such items as keys for display cases, refrigerator and freezers, electrical boxes, control boxes, thermostat control boxes, flagpole boxes, key actuated electrical switches, etc.
5. The Owner maintenance department shall be provided with a set of plans for each building early in the documentation phase to permit designing the key schedule, supplying the Marshall Best System with required pinning information and to permit enough time to produce and deliver cores and keys (10 to 12 month lead time on new buildings, 3 months on small remodels).

N. Finishes:
1. All touch bars on exit devices to be stainless steel with “push” stamped on pad.
2. All hardware on wood, fiberglass, or hollow metal doors is to be brushed stainless steel or brushed chrome.
3. All exterior hinges are to be stainless steel, US 32D for new construction projects. On addition or renovation projects, match existing hardware.

8.6 Glazing

A. Exterior window glazing should be 1" double pane insulated, tinted.

8.7 Cabinet Hardware

A. Provide teacher wardrobe locks that are compatible with the Marshall Best core cylinders.

B. All millwork requiring locks use “Marshall Best’ 725 series locks only. NO EXCEPTIONS

DIVISION 09 -- FINISHES

9.1 General Notes

A. Where budget permits, the use of maintenance free materials and surfaces is encouraged.

B. Student toilet, shower, dressing and locker rooms must be designed for durability, ease of cleaning, simplicity of maintenance, and repair.

C. Glue down stair treads are not acceptable.

D. Floor finishes:
1. LuxVinyl composition Tile: (LVT).
2. Porcelian / Ceramic Tile
3. Terrazzo: The contractor shall seal new terrazzo, the Owner will apply wax / finish.
4. Quarry Tile: The contractor shall seal new quarry tile, including grout joints, per manufacturer’s recommendations.

5. Carpet/ LVT flooring to terminate at perimeter of millwork. Floor finish shall not extend under millwork.
6. Epoxy flooring required to be used in Food Service area(s) and Locker Rooms.

E. Ceramic tile grout joints in restrooms shall be sealed to control odors. Porous material shall be treated to prevent staining.

F. Architect/Engineer should discuss with Owner at the initiation of the project the use and extent of two layers 5/8" gypsum board, abuse resistant gypsum board, or CMU in areas likely to be subjected to vandalism, i.e. corridors.

G. Consideration may be given to CMU partitions where integration with existing construction is an issue.

H. Double layer gypsum board, abuse-resistant gypsum board, or CMU should be provided in locations subject to potential vandalism, i.e., corridors, laboratories, stairs, etc. Provide 4”x4”x4’ stainless steel corner guards on exposed sheet rock outside corners to 4’ feet above floor finish in corridors. Three (3) foot high porcelain tile wainscot may be used in corridors.

I. Unwanted sound transmission between classrooms and other spaces is an important concern for Owner. Mechanical rooms should be sound isolated from adjacent space. Avoid, where possible, locating a mechanical room adjacent to a classroom.

J. Provide for sound isolation of classrooms, offices, and press box spaces. For sound control, use partitions from floor to minimum 1'-0" above ceiling (3-1/2" metal studs with one layer 5/8" gypsum board each side) with 1-1/2" insulation. (Non-fire rated walls.) Provide a minimum of 3’-0” width of 3” thick sound insulation on the ceiling of both sides of a dividing partition between classrooms and other spaces. The insulation may be on the classroom side only along the corridor side of the classroom.

K. Gypsum board partitions around shower areas are prohibited. Glass (or plastic) shower enclosures are prohibited.

L. Tape and float only behind lockers, where applicable.

M. Painted stripes/graphics are permitted in corridors where approved by Owner. Design should consider locations of graphics in respect to future repainting by Owner.

N. Ceiling material in kitchen, storeroom, and cafeteria must be acceptable to the Health Department having local authority and jurisdiction. Access to firestats on kitchen exhaust hood should be unobstructed. There shall be no exposed piping ducts.

9.2 Finishes

A. Refer to Table of Standards exhibit at the end of these Technical Guidelines

B. Colors for above finishes, including paints, casework, toilet partitions, flooring, doors and frames, etc. should be gathered and selected as soon as possible. Presentation of these colors should then be made for approval to Owner. Approved color board is to be used by Owner for furniture and equipment selection. Water base latex enamel paint is preferred on C.M.U. surfaces. Latex paint is preferred on gypsum board surfaces. Eggshell finish is preferred. Verify standard wall paint color with Owner.

9.3 Owner Standard Materials/Colors/Attic Stock:

A. Provide extra materials for Owner’s attic stock as noted below. Extra materials shall be delivered to the Owner’s designated location by the contractor.
1. Minimum Carpet Specification - Carpet Tiles
   a) Product: Interface Cubic
   b) Manufacturer: Interface
   c) Other acceptable manufacturers: Mannington Commercial, Interface, Tandis/Centiva
   d) Attic Stock: Provide 5% of floor area covered for each color. This extra stock is to be unused tiles and mats and does not include scraps.
2. Gymnasium Multi-Purpose Flooring (elementary and intermediate schools)
   a) Product: “Pulastic” (Elementary) “Chem Turf” (Intermediate) or suitable substitution.

Architect shall provide additional cost effective and durable gym floor finishes.
   b) Manufacturer: Robbins or equal
3. Gymnasium Wood Flooring (middle schools)
   a) Product: Oil base gym floor finish (2 coats)
   b) Manufacturer: Hillyard or equal
4. Gymnasium Wood Flooring (high schools)
   a) Product: Oil base gym floor finish (2 coats) in competition gyms. Oil base (2) coats in JV and practice gyms.
   b) Manufacturer: Hillyard or equal
5. Standard weight room flooring (middle and high schools)
   a) Product: Freeweight (2'x2' tiles)
   b) Manufacturer: Robbins or equal
6. Acoustical Wall Panels
   a) Product: As appropriate for application – standard fabric wrapped panels to be used in Main Corridor, Dining, Music and Lobby Space
   b) Manufacturer: Wall Technology; Tectum
   c) Hanging: Anchor with continuous z-bars with 2" minimum clearance above panel for placement and removal of panel. In athletic areas provide (2) 2"x2"x6" wall brackets to prevent panel movement or dislodging due to objects striking the panel.
7. Acoustical Ceiling Panels
   a) Manufacturer: Armstrong,
   b) Attic Stock: Provide 5% of ceiling area covered for each type of panel and grid.
8. Quarry Tile
   a) Manufacturer: Dal Tile; Metropolitan Ceramics
   b) Grout: Provide epoxy based grout in the food prep areas (where approved by the Owner).
   c) Surface Prep: per manufacturer's recommendations
   d) Attic Stock: Provide 2 cartons of each color of floor tile. Provide 20 lf of each color of base.
9. Ceramic Tile
   a) Product: 8" x 8" wall and 8"x8" floors minimum 6"x 6" (recommend 6x6 option for walls to include DalTile Semi Gloss Line) wall tile
   b) Manufacturer: Dal Tile, Master Tile, Summitville, Crossville, Ceramic Tile International, American Olean, American Tile Supply and Interceramic, Emser, Concept Surfaces
   c) Surface Prep: per manufacturer's recommendations
   d) Attic Stock: Provide 4 cartons of each color of floor tile, 4 cartons of each color of wall tile and 40 lf of each color of base.
10. Porcelain Tile
   a) Product 5/16" thick through body of porcelain tile
   b) Manufacturer: Dal Tile, Master Tile, Crossville, Ceramic Tile International, American Olean, American Tile Supply, Interceramic, Emser, and Concept Surfaces
   c) Surface Prep: per manufacturer's recommendation
   d) Attic Stock: Provide 4 cartons of each color of floor tile, 4 cartons of each color of wall tile and 40 lf of each color of base.
11. Luxury Vinyl Tile (LVT)
   a) Product: 1/8 inch thickness minimum
   b) Manufacturer: Azrock; Armstrong; Tarkett, Mannington;
   c) Attic Stock: Provide 5% of floor area covered for each color.
12. Terrazzo
   a) First floor: Portland cement matrix, marble color chips (thin set on structural slab systems and full sand bed on slab-on-grade)
   b) Second floor: Epoxy matrix, marble color chips
13. Paint

a) Product: Water base latex enamel
b) Manufacturer: Glidden, Sherwin - Williams, Benjamin-Moore, Kelly-Moore, Pittsburg Paints, Monarch, Jones Blair
c) Color: Bone White (Owner will provide formula)
d) Attic Stock:
1) Provide 20 gallons of each color for wall and doors, and 5 gallons of each color of trim and accents at High Schools.
2) Provide 15 gallons of each color for wall and doors, and 4 gallons of each color of trim and accents at Middle Schools.
3) Provide 10 gallons of each color for wall and doors, and 3 gallons of each color of trim and accents at Intermediate and Elementary Schools.
4) Provide 10 gallons of each color for wall and doors, and 3 gallons of each color of trim and accents for renovation projects.

14. Seamless Quartz Flooring
a) Product: Palmalite Palikrom 185
b) Manufacturer: Palma, Inc.

DIVISION 10 -- SPECIALTIES

10.1 Tackboards and Markerboards

A. Tackboards: Provide tack boards in corridors, one per classroom. Size will be approved by Owner in design phase.
1. Three-component type:
2. Vinyl cover, over 1/4" corkboard, laminated to 1/4" hardboard
3. Length - one piece through 16 feet
4. Thickness - 1/2"
5. Quantity
a) Elementary:
1) Grades Pre K-1: six inches at top of marker boards, full length of marker boards, plus 64 sq. ft. (4' x 16')
2) Grades 2 - 6: six inches at tope of marker boards, full length of marker boards, plus 48 sq. ft. (4' x 12')
b) Secondary:
1) Grades 7-12: 16 sq. ft. (4' x 4') (near door).

B. Markerboards (provide in all classrooms)
1. 24 gauge minimum steel base metal plate.
a) Porcelain Enamel Coatings:
b) .0025" thick nickel cobalt primer
c) .003" thick writing surface
d) .0025" thick nickel cobalt ground coat
e) Colors - white.
f) Trim - extruded aluminum
g) Accessories - map rail, chalk trough, flag holders (two per room)
h) Length - one piece through 16’-0”
i) Quantity: Elementary 16 LF on two walls
j) Quantity: Intermediate and secondary 16 LF on each of two walls, plus additional on third wall in math room.
2. All Classrooms are typical with one wall of Porcelain Enamel Board with leave-out for monitor and one wall with vinyl wall magnetic marker board (at High School).

10.2 Display cases (must be recessed into wall)

A. Elementary schools: one near general office.

B. Secondary schools: Two, one near the office, and the other at another location.

C. Locations: hallways as follows - foyer, cafeteria entrance, art classroom area, homemaking classroom area, library area.

D. Type:
   1. Glass sliding bypass openings for hallway side with locks.
   2. Provide lighting.
   3. Minimum of 18" depth.

E. Size: optional.

10.3 Bulletin Boards

A. Provide one bulletin board in all offices and in corridor adjacent to:
   1. General Office
   2. Area of Teacher "sign-in"
   3. Lounge and workroom area
   4. Cafeteria (covered or enclosed)
   5. Head Custodian workroom
   6. At entrance to corridors/classroom wings.
   7. Nurse's office.

10.4 Toilet Compartments and Screens:

A. Elementary Schools - Floor mounted, overhead braced. Phenolic Core. Cast steel, chromium plated, heavy-duty vandal-proof hardware.

B. Secondary Schools, other facilities - Floor mounted, overhead braced. Phenolic Core. Cast steel, chromium plated, heavy-duty vandal-proof hardware.

C. Stadiums - Floor mounted, overhead braced. Solid plastic. Stainless steel, heavy-duty vandal-proof hardware.

D. Provide appropriate blocking.

E. All partition doors shall be continuously hinged. Wall support channels shall be heavy duty continuous stainless steel.

10.5 Toilet and Dressing Room Accessories:

A. Tissue Holders - big roll at student restrooms; double roll in adult areas. (Furnished by Owner and installed by Contractor)

B. Paper Towel Dispensers - Surface mounted (roll only) only, required in all Adult Toilet Areas. (Furnished by Owner and installed by Contractor)

C. Provide electric hand dryers in student areas (to be specified by the Architect)

D. Do not provide paper towel dispensers in student restrooms.

E. Liquid soap dispensers - Surface mounted. (Furnished by Owner and installed by Contractor)

F. Mirrors (unbreakable) - Mount as appropriate for grade level.

G. Grab bars - Comply with ADA requirements. Mount according to age groups listed in TAS.

H. Robe/Towel Hooks

I. Shower Seats- comply with ADA requirements

J. Provide appropriate blocking.

K. Mop rack with shelf at custodial closets.

L. Provide shower curtains at coach’s locker rooms.

M. Sanitary Napkin Disposers - provide stall mounted stainless steel disposal in all female restrooms at the middle school level and above.

10.6 Lockers

A. P.E. Locker Rooms:
   1. Street Clothes Lockers: 12" x 12" x 36" double tier; one for each student assigned at any

one period only.

2. Gym Clothes Lockers: ventilated 12" x 12" x 12" six tier; 1:1 for each student enrolled in physical education, assuming 50/50 boy/girl campus enrollment.
3. Lock Provision: built-in combination locks (verify with Owner), with pull handle.

B. Athletic Locker Rooms:
1. Volleyball - Varsity - 18” x 18” x 72” double tier
2. Volleyball - Junior Varsity & Freshman - 18” x 18” x 36” double tier
3. Girls Basketball - Varsity - 18” x 18” x 72” double tier
4. Girls Basketball - Junior Varsity & Freshman - 18” x 18” x 36” double tier
5. Boys Basketball - Varsity - 18” x 18” x 72” double tier
6. Boys Basketball - Junior Varsity & Freshman - 18” x 18” x 36” double tier
7. Softball - Varsity - 18” x 18” x 36” double tier
8. Softball - Junior Varsity & Freshman - 18” x 18” x 36” double tier
9. Baseball - Varsity - 18” x 18” x 36” double tier
10. Baseball - Junior Varsity & Freshman - 18” x 18” x 36” double tier
11. Football - Varsity - 24” x 24” x 72” single tier football locker
12. Football - Junior Varsity & Freshman - 18” x 18” x 72” single tier
13. Soccer - Varsity - 24” x 24” x 36” double tier if shared with football, otherwise 18” x 18” x 36” double tier
14. Soccer - Junior Varsity & Freshman - 18” x 18” x 36” double tier
15. Boys Tennis - 18” x 18” x 36” double tier
16. Girls Tennis - 18” x 18” x 36” double tier
17. Boys Track - 24” x 24” x 36” double tier if shared with football, otherwise 18” x 18” x 36” double tier
18. Girls Track - 18” x 18” x 36” double tier
19. Visitors - 18” x 18” x 36” double tier
20. Drill Team - 18” x 18” x 36” double tier
21. Coaches - 12” x 12” x 36” double tier executive lockers
22. Lock Provision: separate padlock for high school, built-in combination lock for middle school (verify with Owner), with pull handle. Locks to be provided in contract.
23. All athletic lockers shall have flat top.

C. Locker room benches shall be anchored firmly to the floor – shall be integral concrete or CMU bench.

D. Kitchen: Appropriate number of lockers is to be provided for kitchen employees for coats and street clothes. Locker size to be 12” x 12” x 36” double tier.

10.7 Exterior Signage

A. Site signage will be provided as required to adequately convey the desired information around the site as required by Codes and as recommended by the Architect and as approved by the Owner. Signs shall be properly installed in a concrete footing.

B. Exterior Graphics
1. School name - Locate at primary entrance, size not less than required for legibility from 100-feet distance
2. Street Name and Number - (for Fire Department Use)
3. Temporary project sign - furnished by contractor
4. Monument sign – masonry construction, full-color programmable LED inlay 4′x8′, two-sided
5. Stadium logo signage – Internally illuminated, full color sign, not less than 12′x12′ dimension
6. Stadium scoreboard – Multi-sport full-color LED to accommodate football, and soccer. LED display, 10mm pixel pitch, 6,789 dots/sqm, nominal 42′x24′. Include (2) play clocks. Include duplicate game clock integrated with the field scoreboard system in referee dressing room, and each locker room
7. Include physical graphic panel / sign above LED board including custom graphic / logo.

Rear panel vinyl graphic of equal dimension to LED board face.

10.8 Interior Signage

A. Architect should formulate a proposal and provide to Owner for review of the proposed graphics, room numbers, and name plates; all are to comply with requirements of the Americans with Disabilities Act (ADA). Careful consideration shall be given to the installation hardware and type to prevent vandalism. Room signs shall not provide removable, snap on/off plates that can be easily removed or vandalized. Sign samples should be presented to Owner prior to ordering or installing.

B. Number all rooms, including mechanical, toilets, custodian, etc. with consideration of the existing building numbering scheme. All room signs shall have the room number and the architectural room number. The architectural room number shall be embossed or raised letters without color and located in the lower right hand corner. Room number, name and Braille shall be centered left-to-right and from the top of the sign to the top of the fixed clear window slot. The Braille shall be ½" below the bottom row of text.

C. All rooms shall be numbered and names for non-typical classroom spaces shall be used such as toilet, administrative, library, etc. Provide 6"x6" signs for Type A (classrooms & offices with fixed window slots) & Type B (all locations except classrooms & offices without window slots). Provide 8"x8" signs for Type C (restrooms) and type D (pictogram & ADA signs).

D. Teacher's card insert and room number combined for classroom type spaces.

E. All shall have radiused corners and be made of Special Purpose SP125 decorative thermosetting high pressure laminate, ¼" thick with a melamine surface and a phenolic resin core.

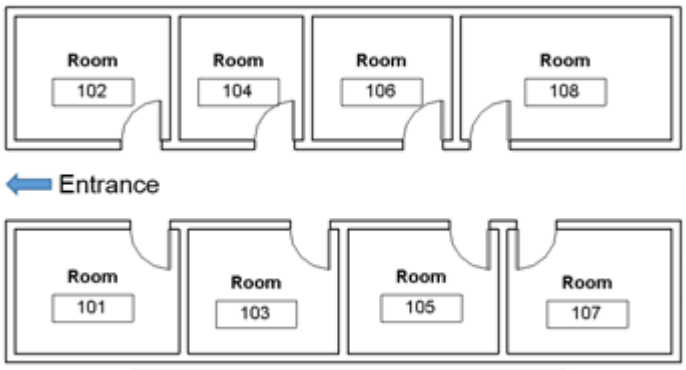
F. Provide mechanically fastened vandal resistant mounting. Wall mount with glue & screws, countersunk. Glass mount with vinyl tape and provide solid cover plate for back side of sign.

G. Product shall be from Best Sign Company or approved equal.

H. Plaque - new construction and additions only; size 18" x 24" maximum, cast aluminum preferred include project name, construction year, names of board members and Owner personnel, (provided by Owner), Construction Program Supervisor, architect and general contractor. Coordinate with the Owner for the standard Owner plaque design.

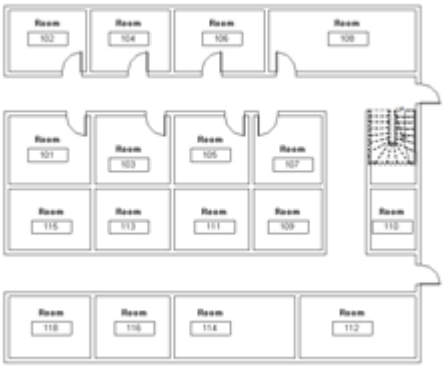
I. Room numbering standard:

1. **Buildings with one main corridor** – In a building with one main corridor room numbers should start at the main entrance and increase as you move away from the entrance. Use even numbers on the left side of the corridor and odd numbers on the right as shown in the image below.

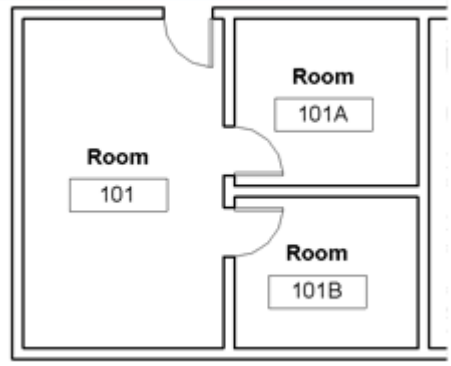


2. **Buildings with multiple corridors** – In a building with more than one corridor, numbers should follow in an ascending order in a clockwise direction from the main entrance as

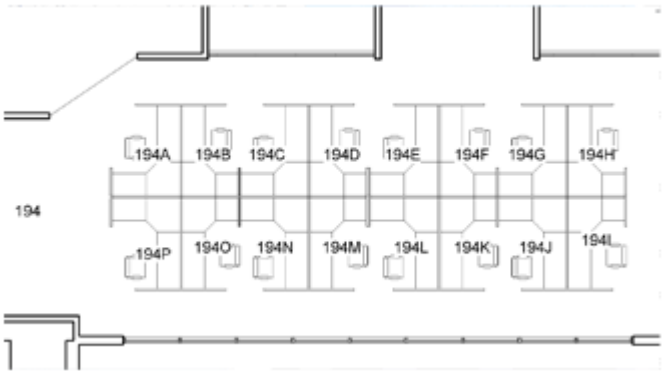
shown in the image below. This should be done in a manner that helps to ensure the logical flow of room numbers for the floor for way finding purposes



3. **Suites** – Suites are spaces that generally have one entrance with one primary room and one to many sub-rooms within. The entrance room to a suite area gets a typical room number while sub-rooms within the suite are numbered beginning with the main suite room number followed by a letter moving in a clock-wise direction. The image to the right is an example of how to number a suite and its sub-rooms.



4. **Cubicles** – Cubicles are essentially spaces within a larger room and need to be numbered as rooms with each row or grouping of cubicles having its own room number followed by a letter for each separate cubicle which provides its own unique space designation. The image below is an example.



5. To the greatest extent possible, rooms with the same digit in the last two positions should be located in the same position in the building (e.g., rooms 110, 210 and 310 should all occur in the same vertical stack). This may require skipping room numbers.
6. Special room numbers are given to building common areas. Below are the current standards for building common areas. Note: where exists, the first digit represents the floor e.g., 1R1 is a restroom on the first floor and 2R1 is a restroom on the second floor.
    a) Elevators: ELEV01, ELEV02
    b) Circulation: CIRC01, CIRC02
    c) Stairs: STAIR1, STAIR2
    d) Shafts: SHFT01, SHFT02
    e) Restrooms: 1R1, 1R2
    f) Electrical: 1E1, 1E2
    g) Mechanical: 1M1, 1M2
    h) Telecommunications: 1T1, 1T2
    i) Janitorial: 1J1, 1J2
7. NOTE: All vertical penetrations (stairs, shafts, etc.) will have the same room number for each floor they pass through. Example: The room number STAIR1 will be identified in the same location on the floor plan for every floor it passes through.
8. Basements and Sub-Basements Floors below the first floor shall be designated as basement or subbasement. The floor below the first floor will be identified as Basement and have a floor code of '0'. Sub-basements or floors below the basement will be numbered starting at -1 and continuing down (e.g., -2, -* etc.).
9. Mezzanines are assigned a two-character floor code with a preceding MEZ followed by the number of the floor below (e.g., "MEZ2" where '2' is the floor below). A mezzanine is defined as a partial floor located between structural floors.
10. Attics are assigned a two-character standard floor code value of AT. An attic area is defined as the accessible floor area above the top floor which is greater than 3' in height.
11. Roofs are assigned a two-character standard code value of RF. A roof is defined as the exterior surface on the top of a building.

10.9 Fire Extinguishers and Fire Extinguisher Cabinets

A. Kitchen area: Carbon dioxide extinguisher mounted on brackets. (No CFCs).
B. All other areas: Dry chemical extinguisher mounted in recessed cabinets.
C. (No CFCs).
D. Provide cabinet door-type catches in lieu of "break glass" type cabinets without locks.

10.10 Emergency Access

A. Provide one or more "Knox Box" at locations as required and approved by the Fire Marshall having jurisdiction. Provide Knox Box for shunt at main electrical. The box(s) are to be monitored by the Owner police department.

10.11 Awnings and Covered Walkways:

A. All materials to be prefinished with Kynar 500 or equal finish.

10.12 Flag poles

A. Provide for the location and installation of 2 flagpoles. Flagpole should be located near the principal entrance to the building. Flagpole height will be appropriate to the building scale and meet local code requirements. If design is such that consideration is given to locating the flagpole at other than the principal entry, such as a courtyard, obtain and document Owner consent.
B. Flags shall be lighted.

DIVISION 11 -- EQUIPMENT

11.1 Custodial Room Equipment

A. Storage:
   1. Shelving to allow for tissue and lamp storage.
   2. Allow space for storage carts 36" (W) x 18" (D) x 30" (H). 4 are required at elementary schools and 7 at intermediate.
   3. Allow space for work bench and tool storage cabinets (not in contract).
   4. Verify door size requirements with Owner in order to accommodate floor cleaning equipment storage. In Intermediate, Middle, and High Schools provide 4'-0" door for all Custodial Closets. Additionally for High Schools provide Main Closet with double 4' doors and space for auto scrubber and an extractor. Main Closet should be located adjacent to Cafeteria area.

B. Mop Racks
   1. Wall mounted - fabricated metal type with shelf preferred.

C. Custodial Sinks:
   1. Service sink to accommodate 12-16 quart mop buckets.
   2. Use floor-basin-type service sinks.

11.2 Gymnasium Equipment

A. Intermediate Schools
   1. Basketball backboards:
      a) Provide four sets of glass backboards (2 for full court and two for half court play) - equip these backboards with motorized operative lifting ratchet, back-folding if possible at main goals, side goals to be fixed. (Structural support for backboards is required.)
      b) Verify during the design phase any equipment to be provided by Owner.
      c) Gym Seating: Manual pull-out benches, verify with Owner.

B. Middle and High Schools
   1. Basketball backboards:
      a) Provide glass backstops.
      b) Provide four additional sets of glass backboards for half court play - equip these backboards with motorized operative lifting ratchet, back-folding if possible. (Structural support for backboards is required.)
   2. Volleyball Inserts:
      a) Anchor into concrete slab beneath gym floor.
      b) Three sets of volleyball inserts are to be provided at competition gym, as space permits. Inserts will be provided and installed by the Contractor.
   3. Gym Seating:
      a) General Gymnasium Considerations:
         1) Provide wall padding on walls adjacent to basketball backstops.
         2) Provide Impact Protection - Clocks, lights, safety chains in all gymnasiums.
         3) Provide separate locations for gymnasium storage and power transformer/electrical panel equipment. (No exceptions)
         4) Verify during the design phase any equipment to be provided by Owner (including scoreboards).
         5) Provide power, data, and scoreboard control on both sides of court. Locate in wall.

C. Outside surfaced play areas, provide for hard surfaced play area at elementary, intermediate and middle schools with two (2) pole mounted basketball backboards. Reference Owner Educational Specifications for additional information.

11.3 Stage Equipment

A. Secondary with full production Auditorium
   1. Overhead lights - minimum of three rows (bars with individual spots).
   2. Dimmer control both with public address systems amplifier, switch panel and monitor speaker, turntable/recorder with phone input capability. Dimmers for stage and spotlighting only with minimum incandescent lights on dimmer (major house light - LED on switches). Dimmer unit to be the type recommended by DPS.
   3. Spotlights for general stage - illuminations (include off stage spots for front stage illumination). Catwalk optional.
   4. Projection screen (overhead mounting). Motorized
   5. Curtain, stage - rear cyclorama, concert, curtain, front curtain, and both side cyclorama, side masking at 6' o.c.
   6. Public address system with alarm signal override.
   7. Provide acoustical treatments, if necessary, for the intended use.
   8. Identify all circuits.
   9. Provide ventilation for control panels and dimmer boards
   10. Reference Division 27 for additional requirements.

B. Elementary with Stage (Cafetorium)
   1. Dimmer control panel - stage and spotlights only.
   2. Spotlights for stage illumination (ceiling or wall mounted).
   3. Projection screen (overhead mounted). Electric
   4. Curtains: Front curtain, rear cyclorama and both side cyclorama.
   5. Public address system with alarm signal override.
   6. Consider lighting and HVAC requirements.
   7. Provide Ventilation for control panels and dimmer boards.
   8. Reference Division 27 for additional requirements.

11.4 Food Service

A. Standard equipment lists identifying Owner furnished and contract furnished kitchen equipment will be provided.

B. Close coordination of all food service equipment (both furnished in the contract and not in contract) with plumbing, electrical, and HVAC provisions is critical.

C. Design fire dampers in the exhaust duct to satisfy building code requirements for kitchen exhaust hood. Furr-in kitchen exhaust hood to the roof, for fire rating. Clearly coordinate installation of vent-a-hood exhaust system with make-up air system.

D. Equipment with “Boiler” classification shall not be used. The use of boilers requires additional building insurance as well as inspections.

E. The use of quartz or synthetic quartz tops at serving lines is prohibited. All counter tops shall be stainless steel. Tray slides shall be "Silestone" or equivalent.

F. Provide 4'-0" x 7'-0" kitchen delivery access door with square lite at all kitchens.

G. Equipment Listing.
   1. Final inventory of Kitchen Equipment and manufacturers to be reviewed and approved by Owner food service department. Quantities and layout to be determined by design team and Owner food service. Preferred manufacturers are noted below:

DESCRIPTION	MFGRS	FURNISH	INSTALL	ES	IS	MS	HS	REMARKS
Walk-In Cooler/Freeze	Thermo Kool	K.E.C.	K.E.C.	1	1	1	1	Size based on program
Refrigeratio n System	RDT	K.E.C.	K.E.C.	1	1	1	1	Size based on program
Cooler/Freeze r Shelving	Metro Max	K.E.C.	K.E.C.					Quantity based on size

Dunnage Racks	Metro Max	K.E.C.	K.E.C.					Quantity based on size
High Density Shelving Units	Metro Max	K.E.C.	K.E.C.					Quantity based on size
Can Storage Racks	New Age	K.E.C.	K.E.C.	4	4	4	4	
Mobile Utility Carts	Cambro Bus Cart utility BC340 KD480	K.E.C.	K.E.C.	3	4	4	6	
Mobile Pan Racks	Crescor	K.E.C.	K.E.C.	2	4	4	4	
Work Table	Custom	K.E.C.	K.E.C.	2	2	2	2	
Food Processor	Robot Coupe	K.E.C.	K.E.C.	1	1	1	1	
Vegetable Preparation Sinks	Custom	K.E.C.	K.E.C.	1	1	1	1	
Disposer Prep Sinks	Salvajor	K.E.C.	K.E.C.	1	1	1	1	
Can Opener	Edlund #1	K.E.C.	K.E.C.	2	3	3	3	
Cook's Table With Sink	Custom	K.E.C.	K.E.C.	1	1	1	1	
10 Pan Steamer (Doublestack)	Cleveland #25CEa-10	K.E.C.	K.E.C.	2	2	2	3	
Water Filters	Everpure	K.E.C.	K.E.C.	3	3	3	3	
Hot Water Dispense	Hatco	K.E.C.	K.E.C.	1	1	1	1	
Hot Water Dispenser	Custom	K.E.C.	K.E.C.	1	1	1	1	
Double Convection Ovens	Blodgett	K.E.C.	K.E.C.	2	3	3	4	

DESCRIPTION	MFGRS	FURNISH	INSTALL	ES	IS	MS	HS	REMARKS
Exhaust Hood With Fire Protection	Avtec	K.E.C.	K.E.C.					Qty. / size based on program
Mixer Accessory Rack	Custom	K.E.C.	K.E.C.	1	1	1	1	
Mobile Ingredient	Rubbermaid	K.E.C.	K.E.C.	2	2	2	2	
Cook's Table With Sink	Custom	K.E.C.	K.E.C.	1	1	1	1	
Mobile Proof Cabinet	Crescor	K.E.C.	K.E.C.	1	1	1	1	
Pizza Oven	Lincoln Impinger II FB2G-	K.E.C.	K.E.C.	1	1	1	1	Gas
Tilt Skillet	Vulcan VG40	K.E.C.	K.E.C.	1	1	1	1	Gas

4 Burner Range with Griddle								
Hand Sinks W/ Towel & Soap Dispensers	Advance	K.E.C.	K.E.C.	4	4	4	7	
Hose Reel Spray	T&S Brass	K.E.C.	K.E.C.					Quantity based on size
Hose Reel Spray Control Cabinet	T&S Brass	K.E.C.	K.E.C.					Quantity based on size
Mobile Utensil	Metro	K.E.C.	K.E.C.	1	2	2	2	
Utensil Wash Counters	Custom	K.E.C.	K.E.C.	1	1	1	1	
Utensil Wash Sprayer	T&S Brass	K.E.C.	K.E.C.	1	1	1	1	
Scrap-Master	Salvajor	K.E.C.	K.E.C.	1	1	1	1	
Utensil Washer (Conveyor)	Hobar t	K.E.C.	K.E.C.	1	1	1	1	
Booster Heater	Hatco	K.E.C.	K.E.C.	1	1	1	1	
20 Qt. Mixer	Hobart	K.E.C.	K.E.C.	1	1	1	1	
Ice Machine	Scotsman	K.E.C.	K.E.C.	1	1	1	1	
P.O.S. Systems		Owner	Owner	2	4	4	5	
Grill Counter	Mod-U-Serve	K.E.C	K.E.C	0	0	0	1	
Heated Display Cases	Serv-O-Lift	K.E.C	K.E.C	0	0	0	0	To be part of modular serving line
Refrigerated Display Cases	Serv-O-Lift	K.E.C	K.E.C	0	0	0	0	To be part of modular serving line
Heated Warmer Drawers	Hatco	K.E.C	K.E.C	2	4	4	5	To be part of modular serving line
Heat Lamps	Hatco	K.E.C	K.E.C	6	10	10	10	To be part of modular serving line
Glass Door Beverage Coolers		Purveyor	Purveyor	0	1	1	5	

DESCRIPTION	MFGRS	FURNISH	INSTALL	ES	IS	MS	HS	REMARKS
Mobile Hot Food	Crescor	K.E.C	K.E.C	1	1	1	2	Quantity as required
Back Bar Counter	Custom	K.E.C	K.E.C	0	0	0	2	
Pizza and Pasta Counter	Mod-U-Serve	K.E.C	K.E.C	0	0	0	1	
Southwestern Counter	Mod-U-Serve	K.E.C	K.E.C	0	1	1	1	
Refrigerators	Traulsen	K.E.C	K.E.C	1	1	1	1	Quantity as required

Home Cooking Counter	Mod-U-Serve	K.E.C	K.E.C	2	3	3	1	
Drop-In Frost Plate	Mod-U-Serve	K.E.C	K.E.C	2	0	0	0	To be part of modular counter
Back Bar Counter With Sink	Custom	K.E.C	K.E.C	0	1	1	3	
Pass-Thru Hot Food Cabinet	Traulsen	K.E.C	K.E.C	2	4	4	7	
Pass-Thru Refrigerato	Traulsen	K.E.C	K.E.C	2	4	4	7	
Snack Bar Counter	Mod-U-Serve	K.E.C	K.E.C	0	1	1	2	
Frozen Drink		Purveyor	Purveyor	0	4	4	6	
Milk Coolers	Mod-U-Serve	K.E.C	K.E.C	2	4	4	4	To be part of modular serving line
Ice Cream Cabinet	Mod-U-Serve	K.E.C	K.E.C	2	4	4	7	1 per serving line, not built-in
Traffic Rails	Custom	K.E.C	K.E.C	0	2	2	6	As required by design
Corner Guards	Custom	K.E.C	K.E.C	5	5	5	5	As required by design
Air Screen	Mars	K.E.C	K.E.C	1	1	1	1	
Wall Shelving	Metro	K.E.C	K.E.C	1	1	1	1	As required by design
Washer Dryer	Whirlpool	G.C.	G.C.	1	1	1	1	Reference residential equipment
Thermo Compactio n System	Styro Solution s	K.E.C	K.E.C	0	0	0	1	Verify with Owner

11.5 Residential Food Service Equipment

A. Refer to Educational Design Specifications for equipment lists identifying Owner furnished and contract furnished kitchen equipment.

B. Design team should submit a package of proposed equipment with the design development package.

C. Provide the following appliances, all model numbers shown are Whirlpool Corporation:
   1. Electric Cook-top (Teacher Demo) - 2 elements, model RCS2002LS, 21” width.
   2. Electric Cook-top - 4 elements, 30” width.
   3. Range Hood - vertical exhaust (220 cfm), variable-speed control, 30” width. Mount controls on front side of base cabinet to comply with ADA.
   4. Electric Range - 30” wide, 4 elements, slide-in, 4.65 cu.ft. self-cleaning.
   5. Oven/Microwave Combination - 30” width, 1.4 cu. ft. upper/4.3 cu. ft. lower, self-cleaning.
   6. Microwave Hood Combination - 1.5 cu. ft. capacity, 4-stage programmable cooking, 4 speed exhaust (200 cfm min.), vented external exhaust.
   7. Disposer - 3/4 H.P., stainless steel grinding wheel and shredder.
   8. Dishwasher - 5 cycle, 5-level, delay wash, 24” width.
   9. Refrigerator - 25 cu.ft., 35-7/8” width with automatic frost-free defrost, automatic icemaker

(not required if stand-alone ice machine is specified in room).

10. Washer - 12 cycles, 4 temperatures, variable water levels, 3.2 cu.ft. capacity, 27” width.
11. For use in Life Skills, Clinics and Food Labs.
12. Dryer - 5 cycles, 4 temperatures, 5.9 cu.ft. capacity, 29” width,.
13. For use in Life Skills, Clinics and Food Labs.
14. Countertop Microwave Oven, model MT411OSP, 1.1 cu.ft. capacity, touch control system, 10-level variable cooking.

11.6 Life skills Equipment

A. Life skills bench in restroom area will be provided as FFE. Provide electrical power as part of contract.

B. Overhead lift at life skills. Coordinate with Owner to determine if lift is required.

11.7 Science Equipment

A. All casework locks are to be keyed alike.

11.8 Laundry Equipment

A. Washer-Extractors/Drying Tumblers - Commercial
   1. To be provided at High School Football Locker Room.
   2. Provide 4’-0” door to room.

B. Washer-Extractor
   1. Capacity: 60 lb.
   2. Speed: 6-speed unit
   3. Volume: 9.0 cu.ft.

C. Drying-Tumblers
   1. Capacity: 75 lb.
   2. Motor: ¾ HP, Gas 165,000 BTU/HR
   3. Electrical Requirements: 120/60/1
   4. Air Outlet: 8”0

D. Heavy-Duty Washers and Dryers
   1. To be provided at basketball, baseball locker rooms.
   2. Provide 4’-0” door to room.

E. High-efficiency Washer - front load
   1. Capacity: 2.84 cu.ft.
   2. Speed: Variable, 5 cycles
   3. Electrical requirements: 120/60/1-15 amp

F. High efficiency dryers
   1. Capacity: 7.0 cu.ft.
   2. Speed: 6 cycles
   3. Temperatures: 3
   4. Electrical Requirements: 240v, 30-amp, 3-PEG NEMA Receptacle

11.9 Projection Screens:

A. Most Classrooms and Labs will have an Interactive Monitor in lieu of projection screen projector. Furnish and install manual borderless projection screen with overhead, concealed mounting. Computer labs, Library, cafetorium and specialty areas.

B. Due to high ceiling requirements the Band Hall projection screens should be a manual wall mounted screen sized accordingly to the overall room length.

C. Projector Mounts
   1. Elementary - Projector mount in cafetorium, Mounts manufactured by Chief Universal or equal with dual single gang knock outs for power and AV cabling are required.
   2. Intermediate, Middle, and High Schools - Projector mounts and data drops in all instructional spaces. Furnish and install 2x2 “floating” projector mounts for all classrooms

in intermediate, middle, and high schools, mounts manufactured by Chief Universal or equal with dual single gang knock outs for power and AV cabling are required.

D. Reference Division 26 for additional power and Division 27 for AV signal cabling requirements.

11.10 Defibrillator:

A. Architect should coordinate quantities and locations with Owner.

B. The units should be fully recessed and are 13″ x 13 ½″ x 7″.

C. The units will be furnished by Owner and installed by the contractor.

DIVISION 12 -- FURNISHINGS

12.1 Window Covering

A. Roller shades at Media Center, Dining areas, all stadium windows, community room.

B. Offices

DIVISION 13 -- SPECIAL CONSTRUCTION

13.1 General

A. Division 13 Specification items shall be identified and addressed in the DD Documents Outline Specifications

B. Construction Specifications developed in this Division shall be reviewed with the Owner.

DIVISION 14 -- CONVEYING EQUIPMENT

14.1 Elevators

A. Elevators are required in new multilevel facilities not provided with ramps, unless exempted by the TAS and accepted by the commissioner. Refer to 4.1.3 (5) and 4.1.6; and note that alterations in existing buildings to areas with a primary function will also require this same consideration for installation of an elevator. Written exemptions from the commissioner are required to be submitted with designs. It is intended that the elevators be designed for not less than two wheelchairs and that the use be restricted to the physically handicapped. Operations should be limited to electro-hydraulic. Do not provide wheelchair lifts for access to any levels unless the Owner and the State Barriers Board commissioner provide written exceptions.

B. Elevator controls shall be designed and installed in accordance with the appropriate building code; Vernon's Civil Statutes, Section 7, Article 601B, Texas Accessibility Standards; and the Americans with Disabilities Act (ADA).

C. Cab size should not be less than 20 sq. ft.

D. Elevators are used for movement between floors of books, furniture, normal school freight deliveries between floors, and floor cleaning equipment. This consideration shall be reviewed in specifying the elevator capacity requirements. The following shall be considered minimum requirements:

1. Provide 42” wide door opening.
2. Provide cab size to allow for a 61” (length) x 33” (width) x 51” (height) Buffer.
3. Provide cab size to allow for an 81” (length) x 32” (width) x 46” (height) Buffer.
4. Cab size to allow for a straight entry exit without turning the equipment.

E. A bucket sump with a pump should be provided in all elevator pits. The sump pump shall have a control switch mounted as required by current code.

F. Provide a light and ladder in pit as required by codes.

G. Waterproofing of elevator pits will be required.

H. Provide hooks and pads with elevator.

I. Provide telephone in elevator cab.

J. Provide keyed cut off switches in the corridor outside all elevators. Keys shall be keyed to the Owner's Master Key system.

K. Elevator equipment rooms shall not be located under any space which has plumbing lines or fixtures above.

14.2 Vertical Lifts

A. The use of vertical lifts will require prior approval to the Owner prior to use. Lifts should be located in a secure space to prevent vandalism.

B. Keyed switches for lift shall be keyed to the Owner's master key system.

C. Controls shall be designed and installed in accordance with the appropriate building code; Vernon's Civil Statutes, Section 7, Article 601B, Texas Accessibility Standards; and the Americans with Disabilities Act (ADA).

D. Under no circumstances will wall mounted track and rail stair lift systems be permitted. Vertical lifts shall be enclosed in secure room with locked door at top and bottom.

DIVISION 21 -- FIRE SUPPRESSION

21.1 General

A. Every effort should be made to make any new addition an integral part of the existing building rather than a completely separate building, and to avoid placing fire sprinkler systems in such additions if the existing building is not sprinklered. Instead, horizontal and vertical access, including a fire lane and fire hydrant should be provided. When properly located, such access and hydrant can also provide needed fire protection for at least some of the portable classroom buildings normally found on most campuses.

21.2 Fire Protection

A. An automatic wet sprinkler system complete with flow and tamper alarms, meeting local and state requirements should be provided in new buildings. Provision of such a system in additions and renovations should be reviewed by Owner before commencing design, since access by means of fire lanes and hydrants is the preferred solution. Use of victaulic couplings requires Owner review and approval and should be avoided, if possible.

B. The method of protecting all lines from freezing should be considered and reviewed.

DIVISION 22 -- PLUMBING

22.1 General

A. Site Considerations:
   1. As noted in Division 32, transportable buildings are to be considered on each site. The Architect and Engineer should provide rough-ins for future utilities requirements at locations shown on the site plan, including but not limited to water, sewer, and electrical.

B. Equipment Clearance Considerations
   1. No plumbing lines or fixtures shall be located above any elevator equipment rooms, electrical roofs rooms or IDF rooms.

C. Energy Efficient Design
   1. New facilities and applicable renovations should be designed to:
      a) Require minimum energy consumption to maintain design conditions.
      b) Permit formulation and application of policies regarding the use of energy consuming equipment.
      c) Comply with applicable energy conservation codes

D. Coordination
   1. It is imperative that proper coordination between the various design disciplines be achieved before the drawings and specifications are issued for bidding and construction. Including:

a) Verify possible conflicts between light fixtures, sprinkler heads, ceiling diffusers, grilles, speakers, etc.
b) Possible conflicts related to clearance needed for ductwork, piping, electrical conduit, light fixtures, etc. within the space between the ceiling construction and bottom of structure above.
c) Large mechanical piping should be carefully coordinated with the general construction as required to assure proper support, clearance and accessibility.
d) Coordination of ductwork, piping (plumbing) and switch gear location.
e) Coordination of requirements for louvers, equipment, supports, and other items serving mechanical systems but furnished in general construction. Louvers for mechanical rooms must allow adequate combustion air for boilers but not allow freezing of water piping.
f) Coordination of rough-in requirements of equipment furnished outside the contract.
g) Coordination of site utilities design and interface with building mechanical and electrical systems.
h) Provision by Architect of adequate space for chillers, boilers, air handlers, unitary DX equipment, and other MEP equipment.
i) Provide parapet wall screening for roof top equipment. Screening shall not involve rooftop penetrations without Owner review and approval prior to its design.
j) Assuring that ceiling and exterior wall cavities are properly insulated and that all water piping in the ceiling and exterior wall cavities are properly protected from freezing.
k) Coordination of furnishing, installing and connecting various devices from various trades such as mechanical, electrical, EMS, fire alarm, etc.
l) The Consulting Engineer shall consult the geo-tech for direction on under slab utilities. All designs shall be reviewed with Owner.
m) Dedicated private sub-meters should be provided for kitchen services, including separate meters for electric, gas and water.

22.2 Water Systems

A. Piping should enter each building and rise above the floor slab as soon as possible. Provide cut off on main water line serving each building. Provide latest code approved backflow preventer. All copper connections made underground shall be silver soldered.

B. Piping penetrating exterior walls below grade should be installed in such a manner as to prevent breakage due to building settlement.

C. Where possible, avoid under floor water piping.

D. Each toilet room or battery of fixtures should have a valved cut-off. Provide stop valves for each fixture. All gang toilet rooms should be equipped with at least two floor drains at 4" minimum. Cut off locations shall be labeled where clearly visible to staff.

E. Access should be provided to all valves and other working parts of plumbing devices as well as to items of plumbing requiring periodic maintenance.

F. All mechanical rooms housing air conditioning machinery should have a deep seal floor drain. Minimum size: 4". Avoid locating under machinery. Each such floor drain must be connected to the sanitary sewer and not to the storm sewer system. Avoid locating in return air plenum.

G. Overflow drains for cooling towers must be connected to the sanitary sewer and not to the storm sewer system. This includes any overflow sumps below the cooling tower sump.

H. Arrange layout of janitor closets to allow the floor mounted service sink to be located near the door.

I. All water lines exposed to weather shall be insulated and should be protected from freezing by means of heat tape activated by outside air temperature thermostat.

J. Provide surface mounted type electric water coolers with integral chilling units; chilling units shall not be mounted above the ceiling. Specify only units which are certified by EPA as lead free. Water coolers may be separate units or dual height units to meet the requirements of

Texas Accessibility Standards and the Americans with Disabilities Act.

K. All outdoor drinking fountains should have valves to cut off the supply and drain the line for freeze protection.

L. Non-freeze hydrants with removable keys should be located around the building perimeter where applicable at approximately 100 foot intervals, within 50 feet of main entryways, and on the roof at approximately 200 foot intervals. Roof top hose hydrants should be equal to Woodford Y-34 Freezeless Roof Hydrant, installed in accordance with Owner standard detail.

M. All cold water branch lines serving roof hydrants shall be 1” minimum.

N. Any irrigation system shall be provided with a separate water meter (submeter), downstream from the main water meter, in order to minimize sewer charges. Provide backflow preventer. All irrigation components shall be compatible with Motorola control hardware and software.

O. Kitchens should be provided with hot and cold water. All lavatories and sinks serving student restrooms, toilet rooms, clinic, showers, janitor’s closets, etc., should be supplied with tempered hot and cold water. Owner prefers circulated water heating systems with high-efficiency gas-fired water heaters. Local electric water heaters shall not be used unless approved by the Owner.

P. All connections between dissimilar materials in the piping system should be made with dielectric unions or couplings.

Q. With the exception of waste piping, piping should not be run under slabs on grade. Any piping required to run under slab, such as water service to island stations, shall utilize soft drawn copper with no below-floor joints, and shall be subject to Owner approval. Piping should be run in concrete floor slabs is strictly prohibited.

R. Piping, conduit and duct penetrations through floor construction shall be sealed in a suitable manner.

22.3 Waste Systems

A. Mains 6 inches in diameter or larger and more than 100 feet in length should have a manhole. A manhole should be installed at the edge of the property. The installation Contractor shall be responsible for flushing all waste piping installations.

B. All waste lines shall be inspected using color video equipment before substantial completion. Video of all lines will be provided with the close out documents to the Owner indicating location of each line.

C. At the conclusion of satisfactory camera review, the Contractor will smoke test the wastewater system in the presence of the construction program supervisor and representatives from the Owner. Failed smoke test will be repeated after correction and repairs are made, again in the presence of the construction program supervisor and representatives from the Owner.

D. Drain slopes should be ¼” per foot standard and not less than 1/8" per foot minimum inside the building and 1/16" per foot minimum outside the building.

E. Urinal waste lines should be sized to allow entire battery of fixtures (including back to back installations) to operate for a minimum of 5 minutes without throttling stops. All other waste piping should be sized to meet the Local Plumbing Code Authority, and in accordance with local authorities having jurisdiction.

F. Provide floor drain(s) and connect to the sanitary sewer (not the storm sewer) in each student gang toilet, staff toilet, janitor's closet, kitchen and mechanical room housing HVAC machinery. Minimum size should be 4 inches. Provide flush type floor drains in special education and health service restroom areas. All floor drains, shower drains, floor sinks, etc., shall be provided with automatic trap primers isolated by a valve, located above accessible ceilings.

G. Consideration may be given to providing Proset trap guards for all floor drains in lieu of trap primers, if approved by Owner and the Local Plumbing Code Authority.

H. All drain inlets shall be covered and suitably protected from tile slurry, dirt, debris, etc., during construction. Wash-down of such materials into building drain inlets is strictly prohibited.

I. Plumbing chases should always be readily accessible; "walk-in" chases should have a minimum clear width of 24 inches. Avoid back-to-back fixture carriers in "walk-in" chases.

J. Minimum elevation of piping at "walk-in" chase entrance should be 6'-8".

K. PVC piping should not be located under a slab on grade.

L. All vents through roof shall be located as far as reasonably possible from outside air intakes and HVAC unit intakes. Elevation of vent terminations shall be no lower than top of roof parapet.

M. Full line size cleanouts should be located each 50 to 75 ft. of sewer run inside and 100 ft. outside the building and at every change in direction. Provide a clean out at both ends of each gang of toilets. Provide two-way cleanouts on outlet side of grease traps. Cleanouts should be provided in accordance with good practice and local code.

N. No clean out shall be smaller than the pipe it serves.

O. All cleanouts located within pipe chases should have a top rim elevation higher than the rim of the fixture of the adjacent toilet room. Floor type cleanouts are preferred over wall cleanouts where floor finishes are non-absorbent.

P. Acid dilution tanks and acid waste systems should be provided to serve laboratory sinks and other locations where chemical use is concentrated. Dilution tanks should be located outside underground with accessible top flush with grade. Local dilution tanks under laboratory sinks may be considered only if remote isolated use of chemicals occurs.

Q. For special vocational programs, consideration should be given to a central acid dilution tank. Acid waste and vent piping shall be polypropylene. Acid waste & vent piping shall be polypropylene, with fusion type fittings. Piping located in return air plenums shall be flame retardant meeting ASTM-E84 for 25/50 fire and smoke ratings.

R. Exterior cleanouts should be set in a concrete pad at an elevation to allow a lawn mower to pass over without obstruction.

22.4 Gas Systems

A. To reduce maintenance, gas piping should be located underground only when necessary and shall have a dirt-leg prior to entry to the gas valve above grade.

B. Gas piping shall be run exposed on roof surfaces and supported on full curbs with corrosion resistant pipe rollers. Maintain a minimum of 6 inches to bottom of piping from finished roof surface. Paint exterior gas piping after installation with corrosion resistant primer and severe service paint system. No exposed gas piping shall be run in buildings except for low pressure drops to individual equipment and piping within a room connecting appliances within a single area. Where gas piping must penetrate building walls, provide ventilated sleeves to the exterior. No gas piping shall be run below crawl spaces or in return air plenums.

C. Gas service riser mounted against the exterior wall shall be suitably guarded with masonry channels integrated into the wall system, so as to protect against climbing and scaling of pipe riser. The Engineer should coordinate with the Architect to develop the suitable means of protecting the pipe riser.

D. Where gas demand is high and piping runs long, 5 psi mains should be used if available.

E. Install regulators designed for outdoor use at exterior of building. A test tee with nipple and cap should be provided downstream of each regulator. Each gas piping system shall be installed so the system can be tested in accordance with the Texas Administrative Code and Railroad Commission. Provide test ports for gauges and air intake lines to pump up system, located such that the system can be tested without having to break down the gas piping. (Ref: Texas Administrative Code, Title 16, Part 1, Chapter 7, Subchapter Rule 7.74).

F. Regulator discharge shall not be less than 10’ from any air conditioning intake.

G. Unions should be provided on each side of each regulator.

H. A stopcock should be provided at the meter on each side of each regulator.

I. An indicating gas cock should be provided for the boiler and a "Watts" ball valve FBV-3, or equivalent, on all appropriate appliances, including science tables. Each appliance requiring gas shall have a separate cut-off.

J. At science laboratories, gas and water piping shall be provided with shunt trip solenoid valves and shutoff valves, to be controlled in each lab space (see electrical specifications). Provide gas piping to science laboratories in high school facilities only.

22.5 Piping

A. It is preferred that the following piping materials be utilized for each system:
   1. Waste & vent piping, and roof and storm drain piping: PVC sewer pipe for interior piping limited to above-floor piping only. Service weight cast iron soil pipe per ASTM Standards for all piping under floors. Consideration may be given to SDR35 heavy wall PVC sewer pipe for exterior piping, but shall be limited to underground piping outside the building only.
   2. “Rain & Shine” blue PVC glue is prohibited.
   3. Plumbing water piping: Type “L” hard drawn copper tubing with silver-based solder joint fittings. Piping that must run below floor slabs on grade shall be Type “L” soft copper tubing with no below grade joints.
   4. Gas piping: Black Schedule 40 steel with screwed joint fittings through 2” IPS, and welded fittings above 2”. Consideration may be given to polyethylene gas pipe per ASTM Standards for exterior gas piping, but shall be limited to underground piping outside of building only.
   5. Indirect drain (condensate) piping: Type “L” hard drawn copper tubing with silver-based solder joint fittings.

22.6 Storm and Roof Drains

A. Storm drains should be sized per Local Plumbing Code Authority and local authority having jurisdiction. Insulate roof drains to prevent condensation.

B. Overflow drains shall not be connected to interior drains. Extend overflow lines to discharge outside of building. All roof drainage shall be collected in an underground drain system and diverted away from the building.

C. Metering type roof drains will not be allowed. Provide relief basins or atmospheric breaks in the roof drain piping outside of the building.

D. Roof drain fixtures which cause a water build-up on the roof will not be allowed.

E. At the completion of installation, the interior of all storm drain piping shall be inspected utilizing a video camera throughout. Videotape shall be submitted to the Owner as part of the closeout documents.

22.7 Domestic Water Heating

A. Water heater rooms shall be large enough to allow removal of the unit. Modular-type gas-fired tankless hot water systems are acceptable for lower grade school kitchen use.

B. Point of use electric water heaters may be used where appropriate for isolated low-demand areas, with the approval of Owner.

C. Storage type water heaters shall be carefully designed and selected, and shall be held to a minimum as required for proper hot water service.

D. All storage type water heaters and associated circulating pumps shall be controlled by the energy management system.

E. Design temperature for hot water: Rated for 140°F; but set to include tempering mixing valve stations for 110°F for hand wash and shower use. Provide for scalding protection at sinks.

F. A gas-fired booster heater set for 180°F, protected for water failure should be provided for the dishwasher.

G. Electric instantaneous water heaters (minimal storage) should be considered where cost of hot water piping and related work warrant, and where individual or isolated fixtures require hot water.

22.8 Showers

A. Tempered water served by master mixing valve with cold water bypass should be provided for gang showers.

B. At individual showers, provide tempered water or hot and cold water, with anti-scald shower valves.

C. Where applicable, appropriate column type showers may be used at boys' showers only.

D. Provide at least one accessible shower to each shower locations.

22.9 Piping Thermal Insulation

A. Insulation should be provided for all hot water and cold water distribution piping, hot water tail piece and trap under lavatories for the handicapped, interior drain piping, roof drain fixtures and laterals, roof drain risers in non-accessible chases and as required to prevent freezing of any pipe exposed to outside temperatures.

22.10 Utilities

A. Design should permit gravity drainage of sanitary sewage. Pumping of sanitary sewage is not acceptable unless no other alternative exists, in which case the Architect/Engineer should review with Owner. Where sewage ejector pumps or sump pumps are used, they should be duplex type pumps and be located to allow adequate headroom to remove the pumps from the pits.

B. Design should permit gravity drainage of storm water. Pumping of storm water is not acceptable unless no other alternative exists, in which case the Architect/Engineer should review with Owner.

22.11 Installation Fees

A. Water and Sewer Service:
   1. The Architect/Engineer shall contact the local authority having jurisdiction as soon as possible to determine the extent of work concerning the new services, to include "evaluated costs" levied by Local Water Utilities. Owner should be advised of the findings and these fees shall be included in the project construction estimates. All assessment charges required outside of permit fees, etc. will be paid by contingency change authorization.

B. Gas Service:
   1. The Architect/Engineer shall contact the gas company as soon as possible to determine the extent of work concerning the new service. Owner should be advised of the findings and provide fees in the project construction estimate.
   2. Locate the gas meter as close to the building as possible. Owner prefers no underground gas lines on the customer side of the meter.

22.12 Plumbing Fixtures and Heights

A. The number of plumbing fixtures required should be calculated per code requirements and input from the design team. Owner prefers the use of wall-mounted toilets (American Standard – other manufactures may be considered).

B. Owner prefers manual flush valves (not automatic) Manufacturers are Zurn, American Standard or Sloan.

C. Preferred brand of wash stations, when applied, should be limited to “Intersan” or “Sloan Stone Lavatory Systems”. Other manufacturers will require Owner review and approval. Owner prefers single wall mounted sinks in lieu of wash stations in most locations.

D. Recommended mounting heights for accessible fixtures are regulated by the TAS 2.1.1. When mixed groups are using the facility, contact the commission for additional information and assistance. (TAS 2.1.2)

E. If urinals are provided, comply with accessible fixture requirements of the TAS.

F. Provide vacuum breakers and backflow prevention devices as necessary.

DIVISION 23 -- HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

23.1 General

A. Site Considerations:
   1. As noted in Division 32, transportable buildings are to be considered on each site. The Architect and Engineer should provide rough-ins for future utilities requirements at locations shown on the site plan, including but not limited to water, sewer, and electrical.

B. Equipment Clearance Considerations
   1. The Consulting Engineer shall provide a written statement at the design development stage of the project to the effect that the Architect has provided easy access and adequate space for installation and servicing of all mechanical equipment, including air handlers; otherwise the statement shall indicate changes which are required in space allocation.

C. Energy Efficient Design
   1. New facilities and applicable renovations should be designed to:
      a) Require minimum energy consumption to maintain design conditions.
      b) Permit formulation and application of policies regarding the use of energy consuming equipment.
      c) Comply with applicable energy conservation codes

D. Coordination
   1. It is imperative that proper coordination between the various design disciplines be achieved before the drawings and specifications are issued for bidding and construction. Including:
      a) Verify possible conflicts between light fixtures, sprinkler heads, ceiling diffusers, grilles, speakers, etc.
      b) Possible conflicts related to clearance needed for ductwork, piping, electrical conduit, light fixtures, etc. within the space between the ceiling construction and bottom of structure above.
      c) Large mechanical piping should be carefully coordinated with the general construction as required to assure proper support, clearance and accessibility.
      d) Coordination of ductwork, piping (plumbing) and switch gear location.
      e) Coordination of requirements for louvers, equipment, supports, and other items serving mechanical systems but furnished in general construction. Louvers for mechanical rooms must allow adequate combustion air for boilers but not allow freezing of water piping.
      f) Coordination of rough-in requirements of equipment furnished outside the contract.
      g) Coordination of site utilities design and interface with building mechanical and electrical systems.
      h) Provision by Architect of adequate space for chillers, boilers, air handlers, unitary DX equipment, and other MEP equipment.
      i) Provide parapet wall screening for roof top equipment. Screening shall not involve rooftop penetrations without Owner review and approval prior to its design.
      j) Assuring that ceiling and exterior wall cavities are properly insulated and that all water piping in the ceiling and exterior wall cavities are properly protected from freezing.
      k) Coordination of furnishing, installing and connecting various devices from various trades such as mechanical, electrical, EMS, fire alarm, etc.
      l) The Consulting Engineer shall consult the geo-tech for direction on under slab utilities. All designs shall be reviewed with Owner.
      m) Dedicated private sub-meters should be provided for kitchen services, including separate meters for electric, gas and water.

23.2 Heating, Ventilating, and Air Conditioning Design Conditions

A. Design Conditions
   1. Summer
      a) Outdoor: In accordance with IECC and local authority.
      b) Indoor: 74 °F Dry Bulb/55% RH
   2. Winter
      a) Outdoor: In accordance with IECC and local authority.
      b) Indoor: 71 °F Dry Bulb/55% RH
   3. The HVAC system shall comply with the current versions of the IECC and ASHRAE 62 Standards as enforced by the Authority having jurisdiction.
   4. The design of the total HVAC system shall be presented and discussed in detail with Owner and the Construction Program Supervisor to ensure a cost effective system (design and operation) and to maintain Owner standards.
   5. Owner requires all instructional spaces to be heated, ventilated, and mechanically cooled including building corridors and other major circulation type space. Multi-purpose rooms, which also serve as gymnasiums, will be heated and cooled. Multipurpose rooms and Gyms will still require outside air.
   6. Installation of HVAC equipment shall be in accordance with manufacturer's installation instructions as well as applicable building codes (i.e., International Codes), latest design standards, and local authorities having jurisdiction.

B. Chillers that are 200 tons or less will be air-cooled chillers. Chillers that are more than 200 tons will be water-cooled chillers.

C. For campuses 100,000 sf or less, Owner will consider Ground Source Heat Pump Systems.

23.3 Heating, Ventilating, and Air Conditioning

A. Chilled water cooling shall be used for facilities greater than 100,000 sf. The Owner shall be provided with on-site training for the Chiller operation and maintenance.
   1. Chilled water system should be as follows:
      a) Air-cooled chillers shall be packaged outdoor air-cooled type with screw or reciprocating compressors with 5-year warranties, ASME shell & tube heat exchangers, upflow condenser fans, oil feed pumps, coil hail guards, refrigerant and oil pressure switches, flow switches, pre-piped and pre-charged with all operating and safety controls for a complete assembly. Chiller refrigerant circuit shall include charging valves, sight glass, filter/driers, and line strainers. Chillers will be located in a manner to minimize unit noise to the building, and will be mounted on piers at least 2' above grade for bottom service clearance.
      b) Preferred chiller manufacturer is Trane or Carrier. Consideration may be given to "York" (JCI) with modulating VFD compressor control.
      c) Where multiple chillers are utilized, chilled water system will be a primary/secondary arrangement with primary chiller pumps, variable flow loop pump, and decoupling bypass line. Loop pump will be controlled by a variable frequency drive (VFD) to modulate pump based on variable loop water flow. Chillers will be sequenced automatically based on variable cooling load. Provide additional loop pump and VFD with separate electrical service for each, for shut-off standby operation.
      d) Each chiller will include factory microprocessor-based control that will be compatible for remote control and monitoring by the DDC control system.
      e) Minimum chiller full-load efficiency ratings shall be as follows:
         1) Package Air-Cooled Chiller: 8.5 EER
         2) Water-Cooled Chiller: 0.60 kW/ton
      f) Plant capacity to be sized based on diversified loads. The chiller plant shall be designed and programmed to run utilizing all chillers in a lead lag manner to equal the run time on each chiller.

23.4 Heating, Ventilating, and Air Conditioning Alternatives

A. Ground Source Heat Pump Systems
   1. Owner will consider a geothermal system application for facilities 100,000 sf or less. If approved, the system application will be with package interior ground-source heat pump

units to provide heating and cooling throughout the building. Heat pump units shall be served by well water piping loops that circulate water through underground geothermal wells. Individual units will be provided for each classroom, lab, etc., for independent room control. When multiple units serve one conditioned space, i.e., library, cafeteria, gymnasium, etc., all units shall be served by individual sensors but will be set-up to receive a common set point for heating and cooling, in each space served.

2. Geothermal well systems:
   a) Geothermal well layouts should be carefully coordinated with underground utilities, easements, trees and landscape, site grading, barriers and structures, etc., to avoid conflicts. Wells should be located in open grass, field or sodded areas around the site, or under paved parking lots if necessary. Well locations under driveways should be avoided. Wells under floors of any building or structure are strictly prohibited. Well water piping loops will extend underground from the building to the associated geothermal wells served. Branch piping to geothermal wells should be designed for reverse-return piping configuration to provide balanced flow rate to each well. Underground piping and geothermal wells should be installed at a minimum of 4' below finished grade.
   b) During the design phase A/E will assist Owner in setting up installation of a test well and performance of a thermal conductivity test to determine heat rejection capacity of the geothermal wells installed for each project.
3. Geothermal well water piping:
   a) Prequalification of approved geothermal manufacturers and Contractors shall be established by the A/E with Owner during the Design Phase for the following work:
      1) Geothermal piping products
      2) Geothermal well grout
      3) Geothermal piping Contractors
      4) Well drilling Contractors
4. Ground-source heat pump systems:
   a) Ground-source heat pump units shall be complete package assemblies, high-efficiency series with minimum AHRI Certified efficiency ratings of 14.0 EER at 85 degree F. entering water temperature. Units shall be complete with hermetic scroll compressor(s), supply fan motor and blower assembly, DX coil, DX/water heat exchanger, refrigerant reversing valve, thermal expansion valve, refrigerant service valves, low ambient head pressure control, water freezestat, drain pan, internal isolation, and insulated cabinet with access panels. Units shall include fully enclosed filter housing for 2" filters, with hinged access panels. Units should be provided with 5 year compressor warranty.
   b) Preferred manufacturers for ground-source heat pump units are "Trane", "Florida Heat Pump", and "Climatemaster".
   c) System ventilation shall be in accordance with the adopted versions of the International Mechanical Code and ASHRAE Standard 62. Ground-source heat pump units serving classroom areas and other high-ventilation areas shall include ventilation system and control applications to maintain good temperature and humidity control in the building. This should include either central energy recovery ventilation systems or unit humidity options such as variable-cool control or hot gas reheat control. Demand control ventilation should also be employed with CO2 sensors in conditioned spaces controlled by the DDC system to allow ventilation air only as needed.
      1) CO2 control should be provided for all systems serving higher density occupancy such as classrooms, computer and science labs, gymnasiums, auditoriums, libraries, cafeterias, etc. CO2 control will not be required for areas with lower ventilation requirements such as administration areas, or for areas with high exhaust requirements such as locker facilities, kitchens, and main restroom facilities.

d) It is intended that ground-source heat pump systems utilize interior units inside the building. Exterior roof-mounted HVAC equipment should be avoided where possible.

B. If approved, alternative system configurations to consider are as follows:
   1. Elementary Schools: Single zone DX rooftop units with gas furnaces for each individual classroom. Larger spaces and multi-purpose room such as gymnasiums and cafeterias can have two or more units.
   2. Intermediate Schools: Single zone DX rooftop units with gas furnaces for each individual classroom. Larger spaces and multi-purpose room such as gymnasiums and cafeterias can have two or more units. Rooftop HVAC is the preferred application for two-story configurations with duct chases provided through the second floor. Alternatives such as Split system heat pump application for classroom areas on the first floor, subject to Owner approval.
   3. Middle Schools: Single zone DX rooftop units with gas furnaces for each individual classroom. Larger spaces and multi-purpose rooms such as gymnasiums and cafeterias can have two or more units. Rooftop HVAC is the preferred application for two-story configurations with duct chases provided through the second floor. Alternatives such as Split system heat pump application for classroom areas on the first floor, subject to Owner approval.
   4. High Schools: Single zone DX rooftop units with gas furnaces for each individual classroom for single story configurations. Larger spaces and multi-purpose rooms such as gymnasiums and cafeterias can have two or more units. A 4-pipe chilled and heating water system may be used in the classroom sections of the building, particularly on two-story configurations. Administrative spaces in classroom sections shall be provided a DX system.

C. The alternate standard for DX HVAC systems for Owner facilities will utilize single zone, package air conditioning units, rooftop mounted with direct expansion coils and gas fired heat to supply conditioned air to the classrooms. Individual units will be provided for each classroom for independent room control. When multiple units serve one conditioned space, i.e. Library, Cafeteria, Gymnasium, etc., all units shall be served by individual sensors but will be set up to receive a common set-point for heating and cooling, in each space served.

D. Preferred manufacturers for rooftop units are Trane, and Lennox Energence.
   1. "Trane" equipment at 3-5 ton range for classrooms or other high-vent spaces shall be "Viper" Series with two stage cooling, two-stage supply air and ventilation damper position, and two-stage cooling control.
   2. Equipment at 3-5 ton for classrooms or other high-vent spaces shall be Energence Series with two stage cooling and two stage supply air and ventilation damper position, and two stage cooling control, and with Humiditrol hot gas reheat for humidity control.
   3. Consideration may also be given to “Aaon” Series RQ rooftop A/C units under a Project Alternate. Units at 3-5 ton range for classrooms or other high-vent spaces, shall be variable cooling unit with fully modulating digital scroll compressor, and variable-flow supply fan with VFD control, for modulated temperature control down to 10% minimum.
   4. Rooftop units at 7.5 tons and above shall include two or more compressors with multi-stage cooling control.
   5. All RTUs will be equipped with stainless steel heat exchangers.
   6. Any other manufacturer of rooftop equipment proposed by the Architect/Engineer shall include similarly effective humidity control provisions, and shall be subject to review and approval by Owner.

E. All rooftop A/C units shall be Trane or Lennox Energence only under the Base Bid. Trane shall be base bid “a” and Lennox base bid “b”. Units may be “Aaon” Series RQ under an Alternate Bid. The unit manufacturer selected by Owner under either base bid or alternate bid will not be limited to bid prices only, but may be determined based on life cycle cost analysis by the Engineer.

F. The rooftop units will meet the ventilation requirements of the International Mechanical Code and ASHRAE Standard 62 adopted by the Local Code Authority. Ventilation control shall

incorporate a CO2 sensor in the conditioned space to allow ventilation air only as needed. CO2 control will be DDC-controlled, and provided for all systems serving higher density occupancies such as classrooms, computer and science labs, gymnasiums, auditoriums, libraries, cafeterias, etc. CO2 control will not be required for areas with lower ventilation requirements such as administration areas, or for areas with high exhaust requirements such as locker facilities, kitchens, and main restroom facilities. With the use of Bipolar Ionization it does not require CO2 control.

G. The rooftop units will have a DDC-controlled economizer, with fully-modulating outside air, return air and relief air damper assemblies. Equipment will also have scroll compressor/s, thermostatic expansion valve/s, refrigerant low-ambient head pressure control, hail guards on the condenser coils, hinged access doors with latching devices, and gas-fired for heating with stainless steel heat exchanger. Unit warranties should include 5-year minimum warranty for compressors and 15-year warranty for heat exchanger.

H. Minimum AHRI rated cooling efficiencies preferred by Owner are as follows:
   1. Unitary Rooftop A/C Unit: CEE Tier 2 or better
   2. Split-System Heat Pump: CEE Tier 2 or better

I. All other efficiency ratings must have prior approval of Owner.

J. All heating water and domestic hot water boilers shall meet city, state, and federal codes. All boilers are opened periodically by the Owner maintenance department so that insurance company state certified inspectors may observe conditions on both the water and fire side. This opened condition may exist for an extended period of time, depending upon schedules; therefore the system should be valved to allow isolation of the boiler.
   1. Heating water boilers will be gas-fired sectional cast iron type with minimum efficiency of 80% net IBR. Boilers will be ASME rated, and will include forced draft burners. Burners shall be modulating type if available, two-stage minimum otherwise, and will be low NOX type per TNRCC, with pre-purge control and electric ignition. Alternative type of boiler proposed will require review and approval by the Owner. System will utilize at least two boilers and pumps for sequencing.
   2. Copper fined boilers may be considered. May be considered as an Alternate, similar to the AAON RTU.

K. All HVAC circulating pumps shall be floor-mounted centrifugal type with flexible coupling drive, mechanical seals, and drain base. Pumps will be end-suction or double-suction type as appropriate to optimize pumping efficiency for the duty and capacity required.

L. Provide separate air handling units for zones with differing directional orientations; e.g., provide a separate air handling unit for classrooms with a southern exposure from those with a northern exposure. Provide individual zone control for each classroom space.
   1. Provide a separate air handling unit for each area which is to be separately zoned for operation only when required; these areas include the auditorium, cafeteria, multi-purpose room, gymnasium, kitchen, Library, and administrative area. Air handling unit zones should be carefully selected so that areas used in off hours and in summer months can be economically operated.
   2. Ventilation air for the air handling systems shall be in accordance with the adopted versions of the International Mechanical Code and ASHRAE Standard 62. Ventilation control shall incorporate a CO2 sensor in the return air duct controlled by the DDC system to modulate the outside air control damper to allow ventilation air only as needed.

M. HVAC water piping: Heating water, chilled water and condenser water piping shall be Schedule 40 black steel with screwed fittings through 2” IPS, and welded fittings above 2”. Heating water and chilled water piping shall be insulated throughout with fiberglass insulation, PVC fitting covers and ASJ jacket. All exterior piping shall be insulated with exterior aluminum jacket and provided with heat trace for freeze protection.
   1. May consider grooved end piping.

N. Contractor shall furnish and install chemical pot feeders and provide initial chemical treatment

of chilled and heating water systems at the completion of the project.

O. Provide water meters for cold water makeup lines feeding chilled and heating water systems, to assist in identifying water leaks.

23.5 General HVAC Equipment Requirements

A. All HVAC equipment located on the roof and in mezzanines will be specifically identified with its conditioned space. Each HVAC unit shall be provided with a nameplate that identifies the room or area that that unit serves. The temperature sensors shall have the unit number permanently identified inside the sensor cover.

B. DX units shall have a manual reset high-pressure switch in the high pressure line, and low-pressure switch in the low pressure line. Unit shall also have time delay for compressor control circuits. Split-system DX units shall have a sight glass with moisture indicator and isolation valves in refrigerant circuit.

C. All HVAC units on a particular campus will be the same brand for each type of equipment. Split HVAC systems shall be heat pump systems. HVAC equipment will be high-efficiency type as available.

D. All motors shall be high-efficiency type with sealed bearings for fans, pumps, air handling units, and DX unitary equipment where available.

E. HVAC equipment manufacturers will be required to provide on-site startup and checkout service of all HVAC equipment (A/C units, geothermal heat pumps, air-cooled heat pumps, chillers, boilers, and AHUs), to be carried out by a qualified Manufacturer's Factory Representative. Representative shall be a Certified Service Technician directly employed by the unit manufacturer, and shall have thorough knowledge and experience in operation and service requirements of the installed equipment. Manufacturers will also be required to furnish unit wiring control diagrams and service bulletins for each type of equipment, prepared specifically for each project.

F. If directed by Owner, corridors or circulating spaces, particularly those in the classroom wings, shall be designed with separate and dedicated DX HVAC units which are to be controlled by the EMS controller. The design shall allow the conditioning of the corridor space without conditioning the classrooms. Corridors may otherwise be served with supply branches from adjacent spaces.

G. DX HVAC units serving the administration area should be properly zoned for uniform space temperature. This would include separate DX unit or independent zone control for conference rooms.

H. Owner will assist in the location of specific rooms and areas to be included in specific zones for energy management purposes during the design process.

I. Provide a separate direct expansion (DX) cooling unit for all MDF rooms. IDF Rooms and Computer lab rooms will have separate units running these areas but tied into the energy management system.

J. MDF/IDF Environmental Control Requirements:
   1. Temperature range should be 18°C to 24°C (64°F to 75°F)
   2. Relative Humidity range should be 30% to 55%
   3. Heat dissipation should be 750 to 5,000 BTU per rack/frame

K. Air distribution should be carefully coordinated to position ceiling supply diffuser on the front side of the IT rack, and the return grille on the back side, in order to properly remove equipment heat.

L. The requirements above should be compared with the manufacturer requirements of planned equipment.

M. HVAC sensors and controls must be located in the MDF/IDF. Sensors should be placed 1.5 m (5 ft) AFF.

N. Split-system fan & coil unit, geothermal heat pump, or RTU for unit serving MDF/IDF shall not

be directly over room. Locate outside of room either within adjacent mechanical space or above-ceiling over adjacent areas.

O. All electric rooms containing transformers will be provided with mechanical ventilation utilizing conditioned building air, or dedicated DX air conditioning, to provide tempered cooling in each space and prevent overheating of electric gear.

P. In food service area, roof mount the condensing units for walk-in coolers and freezers. Walk-in coolers and freezers must include electronically commutated motors (ECMs). Make- up air unit to be interlocked with hood exhaust system. Net usable space excludes dry storage, and walk-in coolers and freezers. Kitchen hood fire dampers should be designed to satisfy local building code requirements. The kitchen hood fan shall be switched with the kitchen lights that are adjacent to the kitchen hood, and shall be monitored by the DDC control system.

Q. HVAC main and branch ducts shall be galvanized sheet metal; molded fiberglass shall not be used. Flex duct may be used only to connect outlets to branch duct and shall be limited to no more than five (5) feet. Duct shall meet SMACNA standards. Insulate duct on exterior, rather than interior, to minimize growth of airborne bacteria. Double-wall ductwork with internal insulation and solid sheet metal liner may be used where ductwork is exposed such as in gymnasiums. Consideration may also be given to double-wall ductwork with internal insulation and perforated inner liner where special acoustic requirements are applicable (i.e., auditoriums, band halls, etc.). Concentric supply/return ceiling diffusers shall not be used.

R. Wherever possible, utilize conditioned air from adjacent areas to provide makeup air for areas with high exhaust rates. Consider also using exhaust air for the ventilation of crawl spaces, where needed. Crawl spaces under buildings shall be ventilated with exhaust fans on top of the building connected to the crawl space with exterior-insulated metal duct. The crawl space shall be provided with adequate make up air. The system should be sized to provide approximately one (1) change of air every 30 minutes. The system should be controlled with EMS Controller to maintain temperature and humidity. Disable fan whenever the temperature under the building drops below 40-65 degrees F.

S. Mechanical equipment rooms should be large enough to provide access to all equipment for maintenance, and means to remove and replace equipment must be provided; provide lifting eyes for heavy equipment. Access shall be provided to mechanical equipment room spaces without going through other assigned space. (Owner has found need for 20% more equipment access space than recommended by typical manufacturers.) Provide adequate separate location for custodial storage.

T. Provide appropriately sized roof hatch and steel ladder (both to be secured by locks). Provide permanent ladders at all parapets greater than 30” in height on multi-level roofs. Pedestrian traffic walkway surface should be provided so that equipment can be serviced without traffic directly on the roof. Provide electrical outlet, 120v within 25 feet of equipment for power tools. All rooftop outlets to be GFCI, local reset, in weatherproof boxes. Provide non-freeze hose bibs no further than 200 feet apart for cleaning and maintenance of roof top equipment. Provide clearances as required by NRCA/ARCA recommendations under all piping and frames. See also Division 7 for curb and support requirements. Gas regulators required on the exterior of the gas fired rooftop units shall be designed for outdoor use.

U. When exterior equipment is used, roof mounted equipment is preferable over ground-mounted except for outdoor chillers and cooling towers. Where unavoidable, ground mounted equipment may be used with Owner approval. Ground mounted HVAC equipment should be surrounded by a fence (four sides and top) or wall with clearance which is adequate to perform service and maintenance, securable with gate or door, and which will provide the best ventilation and heat disposal possible. An electrical outlet and hose bib should be provided nearby. Pads should be full size, poured in place.

V. HVAC equipment shall be ducted into the classroom with properly distributed supply air utilizing multiple supply diffusers. Unless otherwise prohibited, locate the rooftop unit above the corridor. VAV boxes will be mounted above ceiling in classroom areas.

W. The location of HVAC equipment above ceilings in ceiling plenums shall be held to a

minimum, and limited primarily to geothermal heat pumps and heat pump fan & coil units if required. At all such locations, adequate plenum height and free service clearance will be provided for complete service and maintenance of each unit. Locate equipment in the ceiling plenums above ceilings in classrooms if at all possible. (verify location with Owner). When the unit is installed in the ceiling plenum, the return air filters shall be located within the served conditioned space. All return air filter racks shall accommodate 2 inch filters.

X. All restrooms and custodial closets shall have a negative pressure when compared to surrounding rooms. Exhausts serving rooms adjacent to restrooms and custodial closets shall be separate fan units to prevent sound and odor transmission. Janitor closets shall have a positive exhaust system. All exhaust and ventilation fans will be roof-mounted type for all flat-roof building facilities. Any fans that must be located above ceilings will be in-line type and provided with adequate service clearance. Exhaust and ventilation fan(s) (not locally switched) shall be controlled and monitored by the DDC control system.

Y. Outside air intakes are to be protected with rain-proof louvers with bird screens (1/4 inch hardware cloth). Provide hail guards on condensing coils. Outside (ventilation) air shall be filtered prior to entering the building.

Z. Condensate drain hubs shall be located higher than the rim of the lowest fixture in the particular sewer run. Slope horizontal condensate piping for proper drainage, including AHU condensate pans. Rooftop condensate lines shall be copper, and generally shall be run on the roof where possible.

AA. Provide cleanouts at the end of all condensate lines.

BB. Piping expansion joints should be accessible for maintenance.

CC. All electrical power to HVAC equipment shall be circuited to panels separate from other building systems electrical circuits.

DD. HVAC system warranties shall not commence until the building is substantially complete.

23.6 Energy Management System

A. The new DDC Control System shall be integrated into the Owner's existing energy management system for complete local and remote control communication. System shall be Windows-based and Web-based control configuration with dynamic graphics operator interface for all point monitoring, setpoint adjustments, calendar-based operation, special event calendaring, etc. The EMCS communication protocol is to be BACnet/IP.

B. Primary control communication shall be through Owner high-speed Ethernet network integrated through central DDC global controller. System shall also include backup telephone communication via phone modem.
   1. The system shall be capable of "stand alone" operation of the building HVAC system and also capable of operation as part of a central energy management system (EMS) located at the Owner Maintenance Center.
   2. The stand-alone DDC electronic control system shall be fully compatible and addressable by the Owner system manufactured and shall be reprogrammable at the remote units or through the Central EMS.

C. The DDC Control System shall be designed and installed to meet the following capability requirements.
   1. Interoperability – System hardware and software must be compatible with existing hardware and software. If the existing hardware is capable of operating on a proposed alternate software that may be an acceptable alternative to Owner, the System must be capable of utilizing a variety of accepted communications protocols including but not limited to: ODBC, COM, DCOM etc. System database must be SQL capable. Full "Schools Interoperability Framework" compatibility is required.
      a) Controls hardware and software must be approved by Owner.
      b) Acceptable DDC Control Systems include, Automated Logic, Unify Energy Solutions and Alerton.

2. Historical Data Collection – Standard data collection capabilities applicable to all data points.
3. Information Reporting – Allow trend capabilities data to be transferred to MS Excel.
4. Preventative Maintenance – Collection of equipment runtime data allowing maintenance to be performed on a “Just-in-Time” or predictive basis instead of incurring unnecessary and preventable costs due to a machine breakdown.
5. Graphical User Interface – Set point modification, equipment status and scheduling should occur through a point and click graphical user interface that eliminates need to access programming for routine event scheduling and/or modification.
6. Calendar Based Equipment Scheduling – Normal operating hours and multiple infinite and self terminating special events can be programmed ahead of time so that an operator need not be on-site to turn on equipment and adjust set points for planned events.
7. Cloud Operations Software –software will be used for Owner facilities, maintenance and technology management.
8. Control Sequence Programming – Plain English programming code must be used to automate complex building HVAC systems, sustain strict environmental conditions and optimize control functions and applications for the facility.
9. Optimal start – Starts system just in time so that set point is reached just as space becomes occupied. Outside air dampers remain closed until Optimal Start sequence is completed.
10. Supply Air/Water Reset – System reacts supply water and/or air temperature based on variation from set point and/or outside air temperature.
11. Demand limiting – Fully adjustable system demand limiting on startup and/or peak time of day periods.
12. Load rolling – Allow building to “roll” loads in order to control demand.
13. Energy monitoring – kWh and kW monitoring of all building electric meters shall be provided through the DDC.
14. Heating/cooling interlock – Prevent simultaneous heating and cooling operation.
15. Multiple System Set point- Allow separate set point for each stage of heating and/or cooling.
16. Global Programming – Allow for global or individual adjustment of all system parameters by Owner site building zone or room.
17. Multiple Functionality – System capability to include HVAC system control, irrigation system control, etc.
18. Scalable – System fully capable of future expansion via a building block approach.
19. Sensible Standardization – System should incorporate sensible standardization in that like systems employ the same GUI design, equipment programming and sequence of operation.
20. Proper zoning and temperature control should be provided for the offices in the administration area to provide balanced and uniform temperature, including separate temperature control for the conference rooms.

D. System controls should allow adjustments of operating conditions in the event Owner future policy regarding energy consumption requires higher temperatures (and humidity) in the summer and lower temperatures in the winter.

E. Room temperature sensors shall be digital display “Smart Sensor” type, including set point adjustment limited to set point ranges for heating and cooling defined by operator through DDC controller. A run override button shall be provided for the administration area only to operate units during unoccupied periods for predefined time periods set by operator through DDC controller (3 hours maximum). Each sensor shall include an integral humidity sensor for humidity monitoring and control as applicable. Each sensor shall also include an LCD digital display, configurable to view any combination of room temperature, humidity, outside air temperature, set points, etc.

F. All HVAC controls should be accessible for maintenance. Flow switches in water lines should be no closer than two feet from any elbow.

G. All control wiring shall be neatly bundled and supported from building structure only; not from ceiling wire, etc. Wiring shall be properly tagged and color-coded to meet Owner standards.

H. For building additions, route new DDC wiring back to the existing building HVAC control panel.

I. Existing controls (if functional) in existing building should not be modified except as required for repairs by major remodeling or addition.

J. The energy management system shall control all storage type domestic water heaters and associated H.W. circulating pumps for scheduled operation.

K. The DDC energy management system shall control exterior lighting including building perimeter and parking lot pole lights for programmed operation. Each lighting zone shall be individually controlled by an ambient adjustable illumination sensor as well as programmed operation scheduling.

L. All electric water coolers (EWC) and all vending machines shall be controlled by the energy management system. Common electric circuits shall be provided for each battery of EWCs and vending machines, each to include a control relay controlled by the EMS.

M. An energy management system sensor shall be placed in the walk-in freezer with a call-out alarm when the freezer gets above a specified temperature.

N. An energy management system sensor (not a thermostat) shall be placed in the walk-in refrigerator and linked to the central energy management system to provide a readout of refrigerator temperature at the Owner Maintenance Center.

O. The Engineer shall obtain from Owner the Owner DDC Energy Management System Specification 23 9000 to be utilized for each project. Standard specification shall be edited and tailored to suit the specific scope of work associated with each. Any deviations from these control standards shall require review and approval by the Owner.

23.7 Testing and Balancing

A. The testing, balancing and adjusting of all HVAC equipment and systems will be a part of the Mechanical Contract. The Testing and Balancing (TAB) Agency, shall be retained and paid by the General Contractor. The Testing and Balancing Company shall be pre-qualified by the A/E with Owner during Project Design. The TAB Agency shall be experienced, possessing calibrated instruments, qualified Engineers (at least one of whom must be a Registered Professional Engineer), and technicians to perform the required tests. Three sets of the final balancing operation shall be periodically observed and approved by the project Consulting Engineer. The final balancing report shall be provided to Owner.

B. A third party Commissioning Agency, hired by the Owner will also be required to perform a complete commissioning of the control and operation of all HVAC equipment and systems. Commissioning shall include verification and report of all control sequences, monitoring points, setpoints, and measured conditions (temperature, humidity, flows, etc.). Commissioning shall be included in a separate report submitted.

C. The TAB Agency will be required to be certified by the Associated Air Balance Council (AABC). NEBB certification only is not considered adequate.

D. The section for independent testing and balancing (paid by the General Contractor) shall be written by the Consulting Engineer and placed in placed in Division 23. Reference shall be made in Division 1 back to the responsibilities of the Contractor written in Division 15 23. Testing and balancing specifications should specifically identify equipment and system components to be tested including air flows, water flows, temperatures and humidities, amperages, etc., to be tested, balanced and reported for each type of HVAC system.

E. The TAB Agency shall be brought in early during the construction phase to review all contract drawings and specifications, addenda, equipment and control submittals and shop drawings, etc., and to offer any input on equipment, system and control installation and operation as may impact his testing and balancing services.

F. The TAB Agency will be required to perform on-site review of all HVAC and control installations prior to testing and balancing procedures, and will develop and submit interim

reports identifying all installation and functional deficiencies found that would in any way impact testing and balancing services. All deficiencies will be corrected by the Contractors prior to conducting testing, balancing and commissioning activities.

23.8 Design and Coordination

A. Administrative Requirements:
   1. On the bid form and/or at contract negotiations, the Contractor will furnish to the Project Engineer a list of manufacturers of major MEP equipment for approval based on project specifications.
   2. Record drawings should be maintained at the job site. A complete set of record drawings shall be provided as detailed in Section One – Close Out Documents.
   3. One set of maintenance and operating manuals, including parts lists, bound in three ring hard binders, will be furnished by the Contractor to Owner prior to final payment.

B. Coordination:
   1. Conflicts between electrical lighting fixtures, air diffusers, ceiling grilles, ceiling speakers, sprinkler heads, etc. should be avoided.
   2. Clearance of ductwork with ceiling construction, structure, recessed lighting, etc.
   3. Clearance and accessibility of mechanical system piping and switchgear location.
   4. Requirement of louvers, equipment supports, and other construction required for mechanical system but detailed/specified within the general construction.
   5. Rough-ins for equipment both furnished in contract and not furnished in the contract. Do not use the term "furnished by others" in the contract documents.
   6. For Owner Maintenance purposes, the following air handling filter sizes should be used: 16" x 20" x 2", 16" x 25" x 2", 20" x 20" x 2", 20" x 25" x 2", or any combination thereof.

DIVISION 26 -- ELECTRICAL

26.1 Site Considerations

A. As noted in Division 32, transportable buildings are to be considered on each site. The Architect and Engineer should provide rough-ins for future utilities requirements at locations shown on the site plan, including but not limited to water, sewer, and electrical.

B. Electrical conduit shall be provided as a stub-out at the building marquee location on each building site (including elementary buildings).

C. Provide conduits between buildings at multiple building sites for special systems as follows:
   1. 2” conduit for DDC control communication.
   2. 2” conduit for fire alarm system
   3. 2” conduit for security system
   4. Data conduit as required for technology– Minimum of (1) 2” conduit

26.2 Electrical Design Concept

A. Service: provide underground 277/480 volt, 3-phase, 4-wire service. Size service from utility to main electrical service panel and the panel itself to provide 15 watts per square foot of building space being serviced and to support transportable buildings. Service for portable buildings shall have all conduits terminating in a concrete handhole with waterproof bolt-down steel cover. Handhole shall be sized for all conduits entering and exiting per NEC and/or IEC. Power factor correction shall be provided for elementary, intermediate, middle and high schools.

B. Single Service: one electric meter per campus is required. For new additions, back-feed the new service through the existing service so as to maintain the standard of "only one electric meter." Exception is a facility requiring two transformers.

C. Sizing of service: provide for future expansion of teaching stations in new buildings of 15% for elementary schools and 25% for secondary schools and to support transportable buildings.

D. Surge Protection: provide surge protection at the main building service panelboard with unit rated for the size and voltage. Provide intermediate surge protection at all distribution panelboards serving data or other sensitive equipment. "Current Technology" is considered Owner standard and is preferred.

E. Data Circuit Surge Protection: All data circuits for the fire alarm system shall have surge suppression installed to protect the FACP from damage. All intercom equipment shall have surge suppression installed to protect the main intercom equipment from damage from transients and lightning.

F. Power wiring in the building: Provide 480 volts, 3-phase. System shall be designed with material and equipment to provide high power factor. A/C panels that serve only 3-phase loads shall be 480 volt, 3 wire, except where 4 wire is required for geothermal heat pump systems.

G. Power wiring for portables: 120/240 volt, single phase minimum 150 amps. Breakers shall be provided in designated low voltage panels by Contractor.

H. Lighting wiring in the building: provide 277 volt, balanced on all phases, for all fluorescent lighting, where present.

I. Convenience outlets: provide 120 volt, 3-wire, for all 120 volt receptacles and for small motor loads of 1/2 horsepower of less.

26.3 Lighting Design Concept

A. Interior lighting to be LED. Incandescent shall not be used. Provide wire guard in gymnasiums.

B. LED lighting shall be applied for all exterior lighting as the Owner Standard. HID lighting may be considered where LED lighting is cost prohibitive or where matching existing fixtures on an existing campus, subject to prior approval by the Owner.

C. Exterior wall mounted lighting shall be shielded and deflected to ground with construction-resistant to vandalism.

D. Flag poles shall be illuminated with appropriate lighting.

E. Pole site lighting: Consideration is to be given for the location and color of poles and fixtures for site lighting. The poles are to be placed in a manner to minimize possible damage to the pole in parking lots including providing concrete protection of the pole. Precast concrete foundations may be used in each pole location.

F. Sports lighting: Musco Sports lighting is considered Owner Standard and is preferred. Substitutions will be considered by Owner only if submitted by the General Contractor prior to bidding. No substitution will be considered after the bid is turned in. Substitution requests must offer exactly the same specifications as Musco Sports Lighting including construction, warranty, service, total light control (spill control), and remote ballasts.

G. The standard classroom LED fixture shall be a three-lamp fixture with one electronic ballast. Absolutely no core ballasts will be acceptable. Lights shall be switched separately to provide lower level lighting for presentations, films, etc. A 2/3, 1/3 switching is required. Offices require dual switching with two ballasts. Advance or Universal brand electronic ballasts are Owner standard and are preferred.

H. The standard LED shall be Philips 28-watt Energy Advantage ALTO II series T-8, powered only by program start electronic ballasts. Philips ALTO series T-8 TL-741 lamps are Owner standard and are preferred. All lamps shall meet Texas Commission on Environmental Quality (TCEQ) requirements for non-hazardous waste.

I. Lighting levels shall be based on TEA minimum requirements. Over-lighting should not be designed. All lighting in building must be functional. No decorative lighting is permitted without Owner approval.

J. Use lighting fixture with favorable coefficients of utilization and maintenance factors, the standard Owner LED lighting.

K. Voltage at any bank of switches shall not exceed 300 volts.

L. Gymnasium lighting circuits shall be zoned separately. LED lights are the gym standard for all school levels including over seating areas in High School spectator gymnasiums

M. A minimum of ½ inch EMT shall be run for all branch circuits. MC cable is acceptable for use only in place of lighting fixture whips.

N. Assure that electrical panels or terminal boards are not located in public spaces or custodian's closets and assure that electrical rooms are not accessible from custodian's closets.

O. Stack electrical closets in two-story (or more) buildings to allow conduit, bus duct, etc. to run vertically in a straight line. Location of electrical closets next to elevator shafts should be avoided to allow better horizontal distribution of branch circuits.

P. All electric water heaters or water heaters with circulating pumps shall have a supplemental grounding conductor run from the cold water hookup to the main electrical switchgear. This is to reduce the possibility of corrosion due to electrolysis. This shall be Owner standard except where in violation of City Codes.

26.4 Service

A. Electrical service shall be 277/480 volt, 3 phase, 4 wire on all new projects, subject to confirmation by the local utility company. Consider upgrading any existing electrical service that is other than 277/480. Copper conductors shall be utilized. Aluminum conductors are not acceptable.

B. Shunt trip main breakers are required by the Fire Department servicing the building. The KNOX Key Switch #3502 shall be utilized for all shunt trip operations required by fire department. The Knox # 3502 Keyed Switch mounts in a single gang rough in box mounted by the Electrical Contractor.

C. Provide capacitor bank at main electrical service designed to correct building power factor to a range between .96 and 1.00 in order to eliminate power company demand charges.

D. Provide protective bollards for service meters located at trash/dumpster locations.

E. Size electrical service from utility to main electrical service panel and the panel itself to provide 15 watts per square foot of building space being serviced.

F. All new electrical services should be installed with wiring and conduit for bringing the signal from the meter demand pulse device in the electric meter enclosure into the building for attachment to the Energy Management System.

G. New main switchboards shall contain standard single meter that measures voltage and ampere load for each phase and power factor meter.

H. Existing electrical characteristics should be maintained, where feasible, for all additions/renovations. Any new electrical service panel required should be back-fed through the existing electrical service, so that only one electric meter per campus is provided (except for portables).

I. Underground service shall be provided as close to the facility as possible and as far away from playground areas as possible. Any fencing around electrical equipment shall have a double gate at the doors of the equipment.

J. All electrical equipment designated for technology shall be true isolated ground dedicated back to the main service or dry-type transformer, if so fed.

K. Circuits serving automated air conditioning control systems shall be dedicated and fed from a panel with surge suppression.

L. Primary electrical service should anticipate a future expansion of teaching stations in new schools:
1. Elementary Schools: 15%
2. Secondary Schools: 25%

M. For future expansion of technology, provide space for one 42 circuit 120/208 volt 3 phase 225 amp panelboard in each zone's electrical room. All technology panels shall be true isolated ground. The ground shall be dedicated back to the main service, or dry-type transformer if so

fed, and an isolated ground bar shall be installed. (Supplemental ground rods are not acceptable for isolated ground equipment.) All grounding conductors shall be stranded copper wire.

N. Provide a copper grounding bar in the MDF Room and in all IDF Rooms with a dedicated grounding conductor (minimum 1/0) terminating at the main electrical switchgear grounding bus for proper grounding of technology and phone equipment.

O. The time and duration of any service outage required to complete renovation work or additions shall be coordinated with Owner well in advance of the anticipated outage.

P. Generator backup is required to support the following systems, spaces, and where required by codes and authority having jurisdiction:

1. Emergency lighting
2. Fire alarm system control panel
3. Walk-In Cooler and Freezer
4. Access control system
5. Security cameras
6. VOIP phone system
7. Cooling and heating equipment for server rooms, MDF, and IDF rooms
8. Power for boilers
9. Hydronic circulation pumps
10. Gymnasium lighting and receptacles
11. Flush valves, where hard wired type are in use

26.5 Distribution System

A. 480 volt, 3 phase should be utilized for power wiring where possible. Panels designated for A/C loads and serving only 3-phase loads shall be 3 phase, 3 wire only. Panels serving geothermal heat pump units shall be 4 wire. Provide single phase protection in three phase panels serving HVAC, motors, and refrigeration equipment with a set of dry contacts for connection to dialer or alarm system.

B. 277 volt, balance on all phases, should be utilized for fluorescent lighting where present, possible and permitted by code.

C. Dry type energy efficient transformers shall be used for 120/208 loads. Transformers serving data loads shall be rated K13 with double neutrals under the Base Bid.

D. Under an Alternate Bid, premium energy saving transformers with harmonic cancellation transformers utilizing phase-shifting technology and 200% neutrals for data panels that will provide a minimum efficiency of 98%. Transformers shall be equal to “Powersmith Power Star Series”.

E. 120 volt, 3-wire, should be used for 120 volt receptacles and for small motor loads (1/2 hp or less).

F. Locations for copy machines should be supplied for 208 and 120-volt copiers. These related circuits should be located in panels separate from critical and technology loads. (Critical meaning emergency/life safety circuits).

G. At high schools, OCE VP2090 are used. Provide a 208 volt, single phase, 30 amp dedicated circuit with a L6-30R NEMA receptacle. At all other locations, OCE 3165 are used. Provide a 208 volt, single phase (with neutral conductor capped off in receptacle box), 20 amp dedicated circuit with a 6-20R NEMA receptacle. Maximum amperage for 120-volt copiers shall not exceed 16.5 amps. Verify locations with Owner.

H. Provide dedicated ceiling outlets for projects and sound.

I. A dedicated 20-amp circuit shall be provided for each vending machine. A minimum of six (6) vending circuits shall be provided in Cafeteria Area.

J. Provide one (1) ¾ inch EMT run from a data panel straight to the Main IDF Room for server equipment. Contractor shall provide pull string.

K. Electrical requirements of all equipment furnished by Owner should be verified, especially heating equipment such as electric ranges in the Home Economics Department, shop and kitchen equipment. Circuits for ranges shall be four wire including ground. Circuits for dishwashers shall be provided. Counter top circuits shall also be provided. Circuits for dryers shall be four wire.

L. All HVAC equipment shall be on separate circuits and on separate panels from other building loads.

M. All exit and emergency lighting shall be circuited to the Emergency Generator. No fluorescent emergency lighting will be acceptable. LED type exit fixtures are standard.

N. Parking lot lighting shall be circuited separately from other building loads and provided with a photocell for control of “ON” and DDC for control of “OFF”. Lighting shall be configured to utilize energy savings practices by providing the ability to turn off separate sections and/or furthest perimeter rows of lighting. Consult Owner for design. For additions, add parking lot lighting to existing photocell parking lot lighting circuits. Wall packs, perimeter and entry lighting shall be controlled photocell on and off and be on a separate circuit. DDC lighting controls shall run contactor(s) and lighting relay panel(s) for all outdoor lighting. Outdoor lighting panel shall be located in main electrical room. Photocell shall be located directly above or on wall outside the main electrical room. Override switch shall be provided for emergency operation or testing of outdoor lighting. Exterior lighting designs for High Schools and Owner Athletic Complexes shall be reviewed on a per project basis.

O. Outdoor security lighting, including parking lot lighting, shall be circuited at high voltage and separately from other lighting loads. These circuits would preferably derive from a common panel controlled by a single relay/contactor panel, with one single photocell at the control circuit unless more panels would prove more efficiently. Should multiple panel locations be used provide a single photocell with relay/contactor panel at each panel location.

P. Use of bollard lighting may be acceptable at building entrances but generally is not permitted for strictly decorative or aesthetic functions.

Q. Conduit should be suspended from the building structure, not from ceiling suspension system. Conduit runs shall be below the top of the roof support structure, not subject to potential damage from roofing screws, etc. Conduit runs shall not be permitted on top of roof joists.

R. Electrical exterior underground feeders (secondary feeders from transformer to main building) should be encased in red concrete with a minimum cover of 3'-0". All other exterior circuits shall have burial tape and be back filled with red sand.

S. Sealtite flexible conduit should be used for final connection to equipment. Aluminum flex wiring will not be used.

T. Square D or Cutler Hammer equipment is preferred manufacturer of electrical equipment.

U. All circuit breakers larger than 20 amps shall be bolt-on.

V. All breakers shall be molded-case thermo-magnet trip type up to 1200 amp rating. Breakers rated 1600 amps and above shall have electronic trip.

W. All panel lugs, breaker screws, bus bars and all equipment with any mechanical connections shall have their lugs torqued to the manufacturer’s specifications. This action shall be witnessed and logged into the close-out documents.

X. Panels should be located in locked rooms; do not locate in corridors, toilets, storage rooms or custodial closets.

Y. On recessed panels and / or in inaccessible spaces, provision should be made for spare empty conduit into space above the ceiling for remaining circuits available in the panel. Minimum of one spare 1 inch stub EMT per 10 spare circuits with junction box and cover plate marked “spare” shall be provided in each panel.

Z. All panel directories shall be typed, and any work done in existing panels shall require ID on each existing circuit if not already ID'd or if in question. Time to complete this should be considered at Contractor's time of estimation. Failure to properly identify all circuits is in violation of the NEC Article 110.3 A (8), and considered to Owner as a violation of Article 110.12.

AA. Adequate space should be provided for all electrical equipment to allow for access, maintenance, and replacement of parts, etc.

26.6 Lighting System

A. Maintained foot-candle levels (calculated using zonal cavity method) should be provided as follows:
   1. Classrooms and laboratories: Classrooms – 40FC and Laboratories – 70FC, 1/3 and 2/3. Switching may be 50/50 if approved by Owner during design.
   2. Cafeterias: 30 to 40 FC split by switching 1/3, 1/3, 1/3. Row of lights nearest exterior windows should be switched separately for energy savings.
   3. Offices: 40FC
   4. Corridors: 20/40 FC by switching or to match existing corridors
   5. Toilets: 30FC
   6. Gymnasiums: 50 FC for Practice Gyms and 80FC for Spectator Gyms (UIL requirement).
   7. Libraries: 70FC
   8. Shops: 50FC, with task lighting when needed.
   9. Computer Labs: 40FC
   10. MDF/IDF: 50FC, measured at the points of cable termination.
   11. Stairwell Landings/Stairwells: 40 FC

B. In existing construction, verify foot-candle levels and coordinate with Owner with regard to matching existing or using above criteria.

C. Athletic field lighting shall comply with "UIL" (University Scholastic League) requirements with regard to illumination levels for competition as follows:
   1. Football Field: 70FC
   2. Baseball & Softball Fields: 50FC Infield, 30FC outfield
   3. Tennis Courts: 50FC

D. Light cut-off shielding shall be provided in residential areas.

E. The Project is under IECC 2015.

F. For energy savings, the facilities are to be designed in accordance with all applicable codes including the 2009 International Energy Conservation Code and Supplements, IECC 2015 or local authority having jurisdiction. Where not required by codes, the lighting wattage should be reduced where good practice allows and task lighting should be utilized as much as possible. Gymnasium lighting shall not be on occupancy sensors due to safety and lamp life.

G. Automatic lighting shutoff is to be accomplished with individual room vacancy sensors when required by codes. Owner-Standard lighting controls are "Wattstopper". Substitutions will be considered only when evaluated by Owner Electrical Supervisor.

H. Center lights above landings in stairwells. For safety and ease of maintaining these lights they should be recessed metal halide of appropriate wattage. No protective glass lens will be required in order to provide easy access to the lamp unless local codes dictate otherwise.

I. The following light types should be used in various areas:
   1. Classrooms: LED
   2. Offices: LED
   3. Cafeteria: LED
   4. Library: LED
   5. Corridors: LED
   6. Large Gymnasiums: LED
   7. Small Gymnasiums: LED

8. Kitchen: LED
9. Student Toilets: LED
10. Small Toilets: LED
11. Small Areas: LED
12. Exterior security, parking lighting, and cut-off type area fixtures: LED mounted on poles, the height of which meet Codes of the local authority having jurisdiction.
13. Interior floodlights: LED
14. Exit lights: LED with vandal resistant lenses
15. Auditorium: LED
16. Stage areas: Special lighting to be verified on individual schools

J. Classrooms shall be provided with LED fixtures. Dual switching shall be used to turn off the one row of lights nearest the projection screen.

K. No illumination of trophy cases is to be provided.

L. LED light fixtures in hallways should be placed with the long axis parallel to the long axis of the hallway. In corridors 8'-0" or wider, install with axis horizontal to the long axis of the hallway.

M. Emergency lighting shall consist of wall pack units with gel type batteries. Chloride # S 18LT9W or Juno LED emergency and exit light units are the Owner standard. Any other manufacturer product shall be approved by Owner prior to its being accepted as a substitute product. Chloride exit fixtures with LED lamps are preferred.

N. Interior night / security lighting shall be designed to the least amount possible and still meet any applicable codes. Lights shall be switched per hall.

O. Light fixtures should be suspended from the building structure; the ceiling system should not be used to support light fixtures. The Architect/Engineer should approve the method of supporting LED fixtures including fixtures in an exposed tee system.

P. Stem-mounted LED fixtures should have stem spacing at 4'-0" on center with stems within 1'-0" from the end of the fixture.

Q. Exterior fixtures should be mounted above 10'-0" to reduce vandalism.

R. Indirect lighting is acceptable for installation under canopies provided they are vandal resistant and accessible to maintenance personnel. If HID lighting is used it shall be a minimum of 70 watt high pressure sodium. Phillips HID lamps are the Owner standard. High pressure sodium lamps shall be "Ceramalux". Any other manufacturer product shall be approved by Owner prior to its being accepted as a substitute product.

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26.7 Receptacles and Switches

A. Switch and receptacle cover plates shall be stainless steel.

B. Number of receptacles per circuit should be limited to eight.

C. Computer outlets shall be run from panels designated for technology, which shall be isolated ground. Provide one (quad) outlet at each data drop required. Two (2) double duplex receptacles may be served from one (1) 20-amp circuit. Coordinate locations with Owner Technology and Electrical departments.

D. In MDF/IDF provide double duplex outlets at 18" AFF, minimum of one quad per equipment rack. Standard location should be behind equipment rack/frame. Coordinate all outlets with Owner IT Staff.

E. In the MDF – coordinate location of SBC Gigaman electrical outlets with Owner Technology Staff. The following power is required as per SBC guidelines.
1. (2) dedicated 120V 30 AMP L530R Twist lock connectors.
2. Power requirements may be subject to change without notice by SBC and must be verified with each project.

F. In MDF/IDF the following additional electrical outlets are required to support the Owner

UPS devices. Coordinate outlet location with Owner Technology and confirm UPS type for each project:

1. MDF – (1) 208 Volt 1 Phase 30 AMP for UPS (Twist Lock)
2. IDF - (1) 125v 20amp - Nema 5-20R

G. Provide 120-volt GFI protected receptacles within 25 feet of all rooftop equipment. This is to provide correct voltage and amperage for the safe and proper operation of HVAC recovery equipment as required by the equipment manufacturer.

H. All corridor switches, restroom switches and any areas where nuisance operation can be a safety issue shall be keyed switches. Leviton devices are the Owner standard. P & S tamperproof switches are not acceptable based on Owner's prior maintenance experience.

I. Provide one spare 1" conduit from a technology panel to the MDF Room, stubbed below the ceiling onto the phone board at 48" A.F.F. for Owner technology and phone equipment. Final wiring to be by Owner.

J. Switches and receptacles should not be located in marker or tack boards.

K. Normal mounting height of switches should comply with state and local requirements regarding access by the handicapped.

L. Mounting height of wall receptacles should be 12" to 18" above finished floor and in accordance with ADA requirements.

M. All receptacles installed outside shall be weather-resistant GFCI type protected, provided with an eyelet for tie-off of power cords, and mounted at a height of 5'-6"above ground level to minimize damage resulting from vandalism. Weatherproof in-use covers shall be provided in wet locations.

N. At sports complex areas, provide one additional 30-amp 125 volt receptacle within 50 feet of grandstands for connection of Owner steam cleaner.

O. All switches will need to be Smart Switches to meet IECC 2015.

26.8 Provision for the Handicapped (including ADA requirements)

A. Provide visual strobes as required by the TAS for all areas of the building, including staff and single use toilets, when fire alarm is activated.

B. All other local and state requirements, including the Architectural Barriers Act, Article 9102, with the Texas Accessibility Standards; or its successor code, and the Americans with Disabilities Act, including 28 CFR Part 36 as amended, shall be followed. The code or standard providing greater access or additional requirements shall govern and be provided for.

26.9 Installation Fees

A. The Architect/Engineer shall contact the Owner service equipment provider as soon as possible to determine the extent of work concerning the new service. The estimated charges will be identified in the project construction cost estimate. Owner prefers that service be brought in underground. Any charges will be paid directly by Owner.

26.10 Special Systems

A. Special systems by the noted manufacturers are the Owner Standard and shall be specified, without an or equal statement, unless otherwise approved by Owner as follows:

1. Fire Alarm and Detection System - Notifier or Silent Knight Farenhyt Series - Use of Simplex Grinnel is not preferred.
2. Clock and Program System – Reference Division 27.
3. Public Address and Intercom System – Reference Division 27.
4. Technology Systems – Reference Division 27
5. Building Security System – Bosch Detection Systems. – Reference Division 28.
6. Energy Management System – Reference Division 23.
7. Irrigation System – Motorola ICC
8. Laboratory Utility Controllers - Isimet

B. Substitutions to the manufacturers for special systems will be considered and approved by Owner prior to bidding. Division 1 shall include a provision requiring this including its application to Division 21 through 28 inclusively.

C. Special Systems design and specifications shall be coordinated with Owner. Construction Specifications shall require special systems training for Owner maintenance specialists on all installed hardware and software.

D. Fire Alarm and Detection System installers shall be prequalified by A/E with Owner approval. Installer names shall not be listed in the specifications. It is the intent of the Owner to service all Fire Alarm and Detection Systems utilizing its specialists. The Fire Alarm Supplier and Manufacturer shall agree to provide upon the systems installation, adequate training for two (2) Owner specialists. Training shall be provided at the Owner's facilities to facilitate the Owner's trouble shooting and maintenance of the installed system. Further, the Fire Alarm System Manufacturer shall provide the Owner all software and hardware upgrades applicable to the system for a period of fifteen (15) years from the date of substantial completion of the Work. Fire Alarm Contractor shall guarantee twenty-four (24) hour response time and warranty service. Emergency response time shall not exceed two (2) hours. Non-compliance during warranty period will force Owner to request the Fire Alarm Manufacturer to re-appropriate the warranty service to another authorized distributor. No exceptions or substitutions will be considered.

E. Special systems equipment shall be located in the MDF Room coordinate with Owner Technology for all locations.

F. Special systems wiring color-coding shall be as follows:
   1. Fire Alarm – Red
   2. Security – Orange
   3. Public Address – Gray (Reference Division 27)
   4. EMS – Purple
   5. Data – Blue with Orange jacks (Reference Division 27)
   6. Wi-Fi - White

G. Contractor shall spray-paint all system junction boxes in rooms and two-foot (2') of conduits extending out of top wall with paint matching color-coding.

H. Special systems low voltage wiring shall be neatly bundled and supported from building structure (i.e., not dangling or supported from ceiling wire, etc.).

I. Provide audible and visual alarm for maintenance employees working on roof.

J. Fire or smoke alarm "door holder system" shall be electromagnetic; electromechanical systems are not acceptable. No "firefly" systems shall be used.

K. Fire alarm devices are to be installed with tamper resistant screws, in accordance with Owner Standards. Pull stations shall be utilized at all points of egress per code. No exceptions shall be considered to minimize number of pull stations.

L. Fire alarm panels and remote power supplies, including power to duct detectors are to be served from surge suppressed panels only and located in IDF or MDF Rooms. Coordinate all panel locations with Owner Technology Dept.

M. Remote power supplies shall be located in readily accessible areas and shall not be located behind or above transformers or electrical equipment.

N. Analog addressable systems shall utilize a number scheme of D1, D2, D3, etc., for smoke detectors and M1, M2, M3, etc., for addressable modules consisting of manual pull stations, water flow switches, tamper switches and other dry contact devices such as hood extinguishing systems.

DIVISION 27 -- COMMUNICATIONS

27.1 Overview

A. The following are guidelines for the implementation of network and telecommunications infrastructure for new construction and renovations. These guidelines are provided to assist network consultants in developing a flexible cable distribution system to provide for future needs of the Owner. The infrastructure of a building is used to transport video, audio, control, and data to work areas around and beyond the physical building. This document is not intended to cover every aspect of the installation of the technology infrastructure but should provide a solid foundation to develop the framework for all new network implementation throughout Owner.

27.2 Terminology (update this with the project specifications)

A. Backbone - Telecommunications cable connecting the MDF to each IDF. May be referred to as the Trunk cable.

B. Equipment Rack - Open support system used for mounting telecommunications equipment.

C. Four Post Frame - Open support system used for mounting network servers and equipment

D. Horizontal Cable - cable to connect the IDF/MDF to the work area outlet.

E. IDF - Intermediate Distribution Frame - A room in a building that houses networking components for a predefined area of that building or campus. LAN service drops in the predefined area should originate/terminate from this point.

F. Insert (Jack) - a device to terminate a single cable, either fiber optic or UTP.

G. LAN - Local Area Network - A geographically limited data communications system for a specific user group consisting of a group of interconnected computers sharing applications, data, and peripheral devices intended for the local transport of data, video, and voice.

H. MDF - Main Distribution Frame - A room in a building that houses the central networking components. Main point of termination for all backbone cable from IDFs and termination point for all LAN service drops within a predefined area.

I. Pathway - The vertical and horizontal route of telecommunications cabling.

J. Termination - connection of cable to an individual insert.

K. VOIP - voice-over IP. Transmission of voice communications over the data network.

L. WAN - Wide Area Network - A collection of LANs connecting multiple buildings across a certain geographical area.

M. Work Area - A building space where the occupants interact with telecommunications terminal equipment, eq. classrooms, labs, offices, etc.

N. Work Area Outlet - A device placed at user workstation for termination of horizontal media and for connectivity of network equipment. Number of drops at each outlet varies.

O. Drop - Term used to define a single cable at a specific location. One outlet with four drops is an outlet with 4 cables.

27.3 Telecommunication Rooms

A. MDF shall be centrally located and in or near the administration area.

B. Unacceptable locations for the MDF include space in or adjacent to:
   1. Electrical Rooms
      a) Mechanical Rooms
      b) Washrooms
      c) Janitor's Rooms
      d) Loading Docks
      e) Any space that contains:
         1) Sources of excessive EMI
         2) Hydraulic equipment and other heavy machine that cause vibration
         3) Steam Pipes
         4) Plumbing

5) Clean-outs

C. A 4-Post Frame shall be provided and installed in the MDF.

D. Equipment racks shall include vertical wire management to provide for an orderly cable installation. Horizontal wire management should be coordinated with the Owner staff during the design stages.

E. Equipment racks shall have extendable keyboard trays and monitor trays in quantities to be determined with the Owner Information Technology (IT) Staff.

F. Equipment racks shall have a minimum of 36” clear space from the farthest protruding front and back of rack/frame to wall and 24” from side of rack/frame to wall.

G. Patch panels shall be fully labeled according to TIA/EIA and Owner standards. Reference Administration Section (27.03.e) for information.

H. Two 4”, minimum, conduit must be stubbed up in floor behind rack-mount to provide access to Voice/Data service. Conduit shall be stubbed 1”-3” above ground at location as coordinated with local Telco provider and Owner IT staff.

I. It is the responsibility of the Consultant to coordinate with Owner IT Department for any additional equipment that will be provided by the Owner that may be mounted in the equipment racks.

J. Square footage of MDF shall be determined in coordination with Architect. Square footage shall fall within parameters of set forth by BICSI. Recommended minimum dimensions shall be 15’ x 10’ however High School MDFs should consider 10’ x 20’.

K. Ceiling height in this space shall be set at 9’-0” A.F.F. The technology consultant shall coordinate this height requirement with Architect.

L. Floors shall be covered with tile or other smooth surface which minimizes static electricity or dust production. Carpet is not acceptable.

M. Electrical requirements (outlet quantity, location, and protection) shall be determined in conjunction with the Electrical Engineers and shall follow additional guidelines in Division 26

N. HVAC requirements shall be determined in conjunction with the Mechanical Engineers and shall follow the guidelines in Division 23.

O. Renovation projects shall require a room to be dedicated for use as an MDF. It is the responsibility of the architect to coordinate with the technology consultant to determine the appropriate location to place the MDF and the size required.

27.4 IDF

A. Equipment racks shall be provided to accommodate the necessary hardware to be installed in the IDF.

B. Equipment racks shall have a minimum of 36” clear space from front and rear of rack to wall. Equipment racks shall have a minimum of 24” clear space from side of rack to wall.

C. It is the responsibility of the Consultant to coordinate with Owner IT Department for any additional equipment that will be provided by the Owner that may be mounted in the equipment racks.

D. Patch panels shall be fully labeled according to TIA/EIA standards and Owner standards. Reference Administration Section (27.03.e) for information.

E. Square footage of IDF shall be determined in coordination with Architect and within the parameters set forth by BICSI. Unless prior coordination is made with the Owner Technology Officer the IDF shall not be less than 8’ x 10’.

F. Ceiling height in this space shall be set at 9’-0” A.F.F. The network consultant shall coordinate this height requirement with Architect.

G. Floors shall be covered with tile or other smooth surface which minimizes static electricity or dust production. Carpet is not acceptable.

H. Electrical requirements (outlet quantity, location, and protection) shall be determined in conjunction with the Electrical Engineers and shall follow the guidelines in section 16.05.b, 16.36.b and 16.36.c.

I. HVAC requirements shall be determined in conjunction with the Mechanical Engineers and shall follow the guidelines in Division 15.

J. Renovation projects may require a room to be dedicated for use as an IDF. It is the responsibility of the network consultant to coordinate with the architect to determine the appropriate room to locate the IDF. If no space can be dedicated solely for use as an IDF, the network consultant shall coordinate with Owner IT Staff for acceptable alternates.

27.5 Pathways

A. All installed cable shall be supported by approved pathway materials including cable tray, conduit, saddles or J-hooks.

B. Cable tray shall be run only in the areas of the serving telecommunications room (IDF or MDF)

C. Plastic tie wraps are not allowed onsite at any time by the telecommunications contractor.

D. Cable tray shall consist of a minimum 2” deep steel wire mesh tray with all necessary cable drop outs, bend radius protection, connectors and all other components to create a fully functional cable tray system that will not threaten the structural integrity of the cable jacket.

E. All thread rods supporting the tray will be covered with a plastic sleeve to protect the cable jacket.

F. Cable tray shall exit MDF/IDF and extend into the approved pathway space per the technology drawings. Cable tray distances from the MDF/IDF will be coordinated with Owner IT Staff and architectural design team.

G. Where cable tray enters MDF/IDF, the tray shall turn down into the room pathways maintaining the proper bend radius. All cable entering MDF/IDF shall be fastened to the cable tray and then enter into the equipment rack/frame wire management.

H. Cable will be bundled with hook and loop (Velcro) straps only. Plastic tie wraps are not permitted at any time in the installation process.

I. Bundles will not exceed 48 cables or the capability of the selected pathway device at any time.

J. Cable shall be supported from cable tray to work area outlet by J-hooks. J-hooks shall be installed at a distance to insure that cable is supported within standards set forth by the TIA/EIA and BICSI (48”-60” OC).
   1. J-hooks shall be fastened to approved building structure. Coordinate approved methods with the Owner IT Staff and architectural design team.

K. 1” conduit shall be installed at each work area location and stub above wall 1”-4”. Conduit shall bend 45° above wall and face towards approved cable pathway.

L. All conduits will be protected with a plastic bushing prior to cable rough in.

M. For outside plant (OSP) conduit the following requirements will be met:
   1. Conduits will be no smaller than 2” or larger than 4”.
   2. A minimum of two (2) conduits will be installed for all OSP routes between Owner buildings or to the service provider right of way.
   3. Quantity and locations inside the MDF /IDF will be called out on the technology drawings. Conduit pathway outside the facility will be shown on the MEP drawings with the other utilities.
   4. Conduit penetrations above the floor will be no less than 1” and no greater than 3” A.F.F.
   5. All penetrations through a fire rated floor shall be fire stopped per applicable code(s).
   6. Unused outside plant conduits will be capped to prevent debris and water from flooding the MDF room. Caps will be labeled “For Telecommunications Only” and left with a pull rope intact and inside the unused conduit(s).

N. In a renovation project it may be necessary to install a perimeter cable raceway in the work area. Should this scenario occur, it will be necessary to submit the anticipated raceway system

information to the Owner IT Staff for approval.

27.6 Data Cable

A. Interior Backbone
   1. Cabling for the backbone of all Intermediate, Middle and High Schools built in the Owner shall use two types of fiber optic (FO) cable to connect between the MDF and each IDF. Elementary schools shall employ a single type of fiber optic cable between the MDF and IDF.
   2. Backbone FO cable shall use both 50/125 um multi-mode, graded index cable and 8.3/125 single-mode, tight-buffered cable.
   3. All elementary, intermediate, and middle schools will employ 12-strand multi-mode 50/125 fiber cable.
   4. All high schools and career techs will employ 24-strand 50/125 multi-mode fiber optic cable.
   5. All intermediate, middle, career tech and high schools will employ an additional 2-strand single-mode fiber cable for backbone connectivity between each MDF and IDF(s).
   6. FO cable shall be terminated at each end inside a rack mounted fiber enclosure. Termination shall be done with SC connectors.
   7. All FO installation and products shall adhere to current IEEE and TIA/EIA standards.
   8. All FO cable shall be indoor-rated with armored construction and installed in approved pathway space. Innerduct is not required with this type of fiber solution.
   9. FO cable shall have service loop of 10’ properly secured above ceiling.
   10. Two additional Category 5e cables will be run from the MDF to each IDF room to serve only as a backup to the fiber optic backbone. These outlets will be used as a temporary backbone connection only.

B. Outside Plant Backbone
   1. All outside telecommunications cable plant shall be properly grounded, bonded, and lightning protected per NEC, national, state and local codes.

C. Horizontal
   1. Horizontal cable of all schools built in the Owner shall use Category 6 4-pair UTP copper cable plant.
   2. All channel installations shall adhere to current manufacturer, BICSI and TIA/EIA standards for telecommunications installation practices.
   3. Coordinate all jacket colors with Owner.

D. Patch Cords
   1. Patch cords shall be of the same cable type as installed horizontal cable.
   2. Patch cords are an integral unit in the channel and shall be handled with the same care and adhere to the same standards as the horizontal and backbone cable.
   3. Patch cords shall be provided at each terminated point in a building.
      a) Work area patch cords shall be Blue 2m for each data port at a work location.
      b) Provide green jacketed 3m patch cords for all VOIP handsets. These patch cords will be 3m in length and will be subtracted from the total number of patch cords required in the MDF/IDF.
      c) Provide blue jacketed 2m and 3m patch cords for MDF/IDF in equal quantities. (50% of each length per total terminations - minus the number of 3m green VOIP patch cables)
   4. All patch cords must be pre-manufactured.

E. Work Area Outlets
   1. Work area outlet shall be installed with appropriate insert to accept specified horizontal cable.
   2. Work area outlet locations should be installed at standard electrical service height and in accordance with current ADA, Americans with Disabilities Act, guidelines.
   3. Configuration of each outlet type shall be determined by the network consultant in

coordination with the Owner IT Staff.

4. Work area locations installed in furniture shall adhere to the standards set forth by EIA/TIA.

27.7 Classroom Design

A. Two drops shall be terminated at the Teacher work area location.

B. Consultant will coordinate all locations with Owner IT staff during the design phase of the project for all drop counts and work station locations.

C. A double gang box with two (2) 1” conduits will be placed next to the teacher work area location for Audio Video interface.
   1. Outlet will consist of the appropriate AV signal cables and terminations at this location.
   2. Cables will feed from the box in the wall to Interactive Monitor on wall. Cables will be terminated in another double gang box. Connectors on this box will match the teacher workstation AV work location.
   3. HDMI and USB connections will need to be installed at input locations.

27.8 Computer Labs

A. Two drops shall be terminated at the Teacher work area location.

B. For Intermediate, middle and high schools there shall be a total of Thirty-six (36) drops terminated at the Student work area locations placed throughout the room.

C. Elementary classrooms will have a total of thirty two (32) drops terminated at the student work area locations placed throughout the room.

D. A double gang box with two (2) 1” conduits will be placed next to the teacher work are location for Audio Video interface to a ceiling mounted projector. This outlet will meet the same requirements as the outlet used in the classrooms.
   1. See Section 115213 for approved projector mounts and methods.

27.9 Media Centers

A. A minimum of four drops shall be terminated at the circulation desk location.

B. A minimum of four drops will be terminated in the library work room.

C. A minimum of four drops will be terminated in the librarian office.

D. All locations to be determined with the Owner IT staff during the design phase of the project.

E. Each student workstation location will have a single drop for each.

F. A double gang box with two (2) 1” conduits will be placed at a location determined by Owner IT staff for Audio Video interface to a ceiling mounted projector. This outlet will meet the same requirements as the outlet used in the classrooms.

G. See Section 115213 for approved projector mounts and methods.

27.10 Special Use

A. Cafeteria
   1. Two drops shall be terminated at each Point of Sale (POS) location.
   2. The Food Service Manager office shall have two drops terminated near the desk location.
   3. Coordinate POS locations and quantities with kitchen consultant during the design phase.
   4. Additional cable drops may be required around the cafeteria area and will be discussed with the Owner IT staff during the design phase.
   5. If the cafeteria has a performance stage, there shall be a dual drop outlet placed on each side of the stage area and in the front face of the top step near the center of the stage.

B. Auditorium
   1. Auditoriums shall be considered a unique space and additional requirements shall be determined in coordination with Architect and Owner IT Staff.
   2. Two drops shall be terminated on each side of stage on the actors’ side and one drop shall be terminated on each side of stage on audience side of wall.

3. One drop shall be terminated at each corner of the back wall of the auditorium and one drop will be terminated in the middle of the wall at audience crossover corridor..
4. Control Room shall have two terminated drops in location(s) coordinated with Owner IT staff and sound system engineer.
5. Ticket booth(s) shall have two terminated drops in location(s) coordinated with Owner IT staff.

C. Band/Choir
1. All band and choir rooms shall meet the outlet requirements previously established for a classroom.

D. Distance Learning
1. Distance learning shall be considered a unique space and additional requirements shall be determined in coordination with Architect and Owner IT Staff.
2. There shall be a minimum of four terminated drops at two different work area locations on opposite ends of the room.
3. Coordinate all locations with Owner IT staff during the design phase.

E. Gymnasium
1. Floor boxes are to be avoided if at all possible. There will be a single drop terminated at a location central to the gym floor where scorer' s table will be located and will consist of a data drop, a microphone and the scoreboard controller.
2. This outlet will be installed at 18" AFF on the wall.
3. If a floor box is required then the data will be supported with a 1" conduit the microphone will be supported with a 1" conduit, separate from the data and a conduit, sized appropriately for the scoreboard control. This location will also receive electrical support as needed.
4. Additional data requirements to be determined by network consultant with Owner IT Staff.

F. Administrative Areas
1. Administrative areas shall have a minimum of a single location with four terminated drops per office/area.
2. Coordinate additional outlet locations as necessary with the Owner IT staff.
3. A terminated outlet will be installed in each book room of the school. The outlet will be installed at 48" A.F.F. at a location to be determined by Owner IT staff.

G. Athletic Facilities
1. Data locations in field houses shall be limited to the coaches' offices, conference rooms, and video rooms. Locations and quantities to be determined with the Owner IT Staff during the design phase.
2. Facilities with data/voice requirements will have an areas established for a wall mounted cabinet or a free standing equipment rack to serve as an IDF for network connectivity.

H. Temporary Buildings
1. Where covered walkways are provided to temporary buildings, EMT conduit (trade size 2 inch or greater) shall be installed as a telecommunications pathway. Ref this section for grounding requirements.
2. When covered walkways are not provided and service requirements are small, aerial service using appropriately sized messenger cables may be permitted by Owner.
3. When clusters of temporary buildings are erected, a centrally located IDF may be established. This IDF is served from the MDF by a dedicated pathway. Conduit quantity and sizes must be coordinated with Owner IT Staff minimum of two (2) 2" conduits.

27.11 Fire Safety

A. Cable
1. Cable tray penetration through fire rated construction must be filled after cable is installed to maintain fire rating of original construction as shown on architectural drawings.
   a) Intumescent sealants, fire blocks, caulking, and all other firestopping materials shall meet the UL standards and local code(s).

2. Where a cable or bundle of cables exits a cable tray and penetrates a fire rated construction a conduit shall be provided to pass through that construction. Conduit must be sized for 250% of installed capacity.
3. Where a cable or a bundle of cables penetrate a fire rated floor, a conduit shall be provided to pass through that construction. Conduit must be sized for 250% of installed capacity.
4. Conduit may be filled with acceptable firestopping material or an acceptable Intumescent ring may be installed around conduit to maintain fire rating of original construction as shown on Architectural drawings.

B. Cable Rating
1. Plenum rated cable must be specified for use in any area of any building where a non-ducted return air system is not in use.

C. Grounding
1. Provide a TMGB for the MDF. The TMGB shall a ¼" thick copper Busbar, an insulated standoff design, not less than 20" in length by 4" width with standard NEMA pre-drilled holes. Install TGB at 72" AFF and coordinate locations with Owner Technology.
2. Provide a TGB for each IDF. The TGB shall a ¼" thick copper Busbar, an insulated standoff design, not less than 12" in length by 2" width with standard NEMA pre-drilled holes. Install TGB at 72" AFF and coordinate locations with Owner Technology.
3. Provide a ground utilizing a number 6 AWG stranded insulated in a green jacket grounding conductor for bonding cross-connect frames, patch panel racks, active equipment, etc., to the TGB or TMGB. Bond the TGB to the TMGB with a number 6 AWG stranded insulated grounding conductor. Ground the TMGB to approved building ground with a number 4 AWG stranded insulated grounding conductor.
4. Provide this grounding and bonding system compliant with BICSI and EIA/TIA standards.

27.12 Administration Standards

A. General
1. It is the intent of Owner to mandate that a comprehensive telecommunications administration system will be provided as an integral part of construction and installation.
   a) The Contractor is responsible for labeling and documentation. Cable and pathway administration will comply with ANSI/TIA/EIA-606-A-2002 until this set of standards is superseded. If superseded, the newer standard will be followed.
   b) All equipment administration not addressed by ANSI/ TIA/EIA-606-A-2002 will be labeled by the Contractor per Owner standards.
   c) All labels will be permanent and machine generated. Hand-written labels are not allowed.

B. Cable and Pathway Administration
1. Cable and pathway administration will comply with ANSI/TIA/EIA-606-A-2002.
2. Format of cable, faceplate insert, and patch panel port label will be the same
3. The MDF identifier is "MDF"
4. Each IDF identifier will have a unique alpha character (e.g. IDF "A")
5. Numeric identifier will be determined by patch panel position
6. Cable terminated to upper left port on first patch panel will be 001, cable terminated to upper left port on second patch panel will be 049 (presupposing the first patch panel is a 48 port patch panel)
   a) Examples: MDF 01, IDF A 56

C. Equipment Labeling and Administration will be required for all equipment racks and frames, patch panels, fiber termination shelves, telecommunications grounding/bonding system

D. Responsibility Matrix for new construction

Technology	Manufacturer	Responsible	Notes
Clocks/Bells		Contractor	These shall be a part of the Front Row PA System.
PA		Contractor	These shall be a part of the Front Row PA System.
Fire	Silent Knight	Contractor	Farenhyt IFP
Burglar	Honeywell	Contractor	
Cameras/security	Video Insight	Contractor	Advidia Cameras
Wireless	Aruba/ controller wireless	Owner	Owner will handle contract for wireless install/ network drops for install will be placed by wiring contractor (LAN)
Wiring	Cat6e/Panduit/ 2u	Contractor	
Switches	HP	Owner	
Printers	HP/Xerox	Owner	
Computers		Owner	
Interactive Projectors	Epson	Contractor	
Document cameras	Elmo	Owner	
Phone system	Shoretel	Contractor	
Audio/Enhancement	Frontrow/Troxell communications	Contractor	
Digital Signs	MVIX	Contractor	

27.13 Quality Assurance and Testing

A. Network Performance
   1. Backbone and horizontal cabling performance levels (e.g., 1000 Base-T, Gigabit Ethernet, etc.) will be selected by Owner during the initial design stage of design. Owner may require that any single or all component(s) of network hardware perform at a percentage above the base standards. It is the responsibility of the network consultant to coordinate all performance decisions with Owner IT Staff.
   2. All specified cable shall meet the transmission standards set forth by the TIA/EIA at the performance level required by Owner.
   3. All specified network connectivity components (inserts, patch panels, etc.) shall meet the transmission standards set forth by the TIA/EIA at the performance level required by Owner.
   4. All installed and terminated cabling shall be tested to verify that the performance meets specifications set forth by the TIA/EIA at the performance level required by Owner.

B. Contractor Quality Assurance - Coordinate with Owner for all minimum standards required for a cabling infrastructure contractor.

C. Testing
   1. The network consultant is responsible for the review of the copper and fiber channel tests at the completion of installation. Network consultant must ensure that all test results meets or exceeds the performance levels specified at the projects inception. Should any results fall below specified performance levels, consultant shall follow up with contractor to rectify. All results falling below specified performance levels shall be reported in electronic format (e.g. Excel, Acrobat, Word, etc.) to the Architect and Owner IT Staff. Any failed channels shall be retested after repair.
   2. Owner reserves the right to test or have an outside consultant test all fiber and/or copper channel installations.

27.14 Wireless access point locations

A. Wireless access control points will be located throughout the facility as required to provide adequate wireless coverage for 802.11N communications.

B. Each outlet will consist of a dual data drop coordinate final locations with Owner IT Staff and their network electronics manufacturer.

27.15 Public Address, Intercom, Clock and Bell System

A. General
   1. Public Address, Intercom, Clock, and Bell System for schools will be the “Front Row Conductor” system.
   2. The Public Address and Intercom system’s clock shall be synchronized with the Master Clock System to provide automatic clock correction and bell schedules.

B. System Features – All Items listed in this Section will be Front Row equipment and devices.
   1. The Central Control Unit shall have the capacity for expanding the system to 300 stations, 125 staff phones, and 4 Administrative Consoles with the addition of plug in modules, as required.
   2. The System shall be complete with circuitry for accomplishing all functions for signaling and communications to all stations, page zones, and administrative control consoles. The unit shall contain all required electronics on modular, plug-in type boards for ease of service and future expansion.
   3. Programming and diagnostics functions shall be accomplished through the use of a standard Windows internet browser. Any PC connected to the building network and provided with the proper authorization shall have multi-level access to the system for programming or diagnostics. Any off-site PC shall have multi-level access to the system through the use of the public internet, provided that they have been granted proper

authorization by the Owner.

4. A working copy of additional programming software, if applicable, will be clearly labeled and delivered to the Owner's Technology Director.
5. The System shall support direct-dialing, two-way communications between all locations equipped with Administrative Control Consoles or telephones to any location equipped with a speaker.
6. The System shall provide full duplex communications between telephone and public address/ intercom system. Systems providing broadcast only and are not capable of listening to rooms are not acceptable.
7. Call switches shall be programmable and capable of routing incoming calls from classrooms to a specific control console or specific group of consoles. Every point shall be individually programmed.
8. Pre-announce tones will alert the classroom of incoming calls with distinct tones for each priority level.
9. The System shall be capable of interfacing with the local Gym(s) and Cafetorium Sound System, providing automatic bridging of the local system, whenever it is accessed from the console. The system shall be able to override the gym and cafetorium system.
10. The System shall support the automatic distribution of user programmable, class change time signals (Bell Schedule) to all selected areas.

C. Administrative control console
   1. The console shall provide selected, two-way voice communications and signaling between the console and room stations as well as between other control consoles in the system. The console shall be equipped with a telephone handset with a retractable cord to allow private conversations. A built-in microphone and speaker shall provide for push-to-talk intercom conversations.
   2. Multiple console locations may be required depending on the facility design. Coordinate the location of the consoles with Owner.
   3. The console shall have the ability to program or change all of the operational characteristics of the Intercom/PA system.

D. Main Equipment Cabinet
   1. The Contractor will provide the required metal cabinet for intercom and associated equipment to house the Telecor XL System.

E. AM/FM Tuner, CD, & Cassette Player
   1. The Contractor will provide an AM/FM Cassette Player, Telecor model TC-1PD.
   2. The Contractor will provide and install an audio CD player.
      a) Coordinate location of CD player in main administrative office with Owner Technology.

F. Power Amplifiers
   1. The power amplifiers shall be manufactured by Telecor. The system shall be sized at ½ watt per classroom, 1 watt per corridor speaker, and 3.5 watts per horn. The amplifier load shall not exceed 80% capacity.

G. Call-In Switches
   1. The call-in switches shall be a momentary contact spring return type. Mount on a stainless steel plate suitable for flush surface mounting on a single gang back box.
   2. The call-in switches shall be Telecor model CS-1 or CS-3 as required. Some areas may require a tamper proof call in switch. Coordinate with Owner on all such locations.

H. Ceiling and Wall Mounted Intercom/Paging Speakers
   1. Internal speakers will be lay-in ceiling 1'x2' type and will be used in all classrooms, common areas and administrative areas.
   2. The loudspeaker shall be complete with a 25-volt constant voltage transformer with power taps at ¼, ½, 1, 2, and 4 watts.
   3. Ceiling speakers shall be flush mounted.
   4. Wall mounted speakers shall be surface mounted.
   5. Speakers shall be manufactured by Telecor.

I. Horn, Loudspeaker
   1. Horns shall be double re-entrant type, with flared bell and integral compression driver rated for 15 watts of continuous power. Horns will be used in shop areas, maintenance bays and other areas where conditions warrant.
   2. Provide and install protective cages for the loudspeaker horns in the gymnasium or other areas that may warrant such protection.

J. Master Time Control System
   1. The System will provide a complete fully integrated master clock system. The system clock in the administration area shall be synchronized through the Intercom/master clock system.
   2. The time control system shall be capable of operating and correcting the clocks as well as controlling class change signals to all speakers and/or bells.
   3. The integrated Master Clock controller shall provide a 10-year battery back-up real time clock to ensure for correct timekeeping of the internal master clock during power failure.
   4. The system shall provide for automatic clock correction for Daylight Savings Time. The System shall automatically adjust one hour ahead in the spring and one hour back in the fall on the correct day and at the correct time. Daylight savings shall not require the use of any user input at the time of daylight savings.
   5. The System shall have the capabilities of synchronizing with an Atomic Clock.
   6. The master clock shall posses the capability to provide alpha-numeric messaging when digital clocks are attached to the system.

K. Digital Secondary Clocks
   a) The secondary clocks shall be Front Row Equipment and Devices.
   2. All secondary clocks are continuously synchronized with the Master, therefore, corrections are done instantaneously and all clocks maintain identical time.
   3. Provide the capabilities to display alpha and numeric codes on the digital secondary clock displays to alert personnel of an Emergency or a situation of concern. Messages can be initiated from an Administrative Console, Master Clock or from a remote contact closure.
   4. Both the units shall be finished in matte black, semi-gloss enamel.
   5. A Front Row Clock Guard is available for the Surface Mount models.
   6. Hall digital clocks shall be double faced.
   7. Back box will be required.

27.16 Cafetorium Local Sound System for Elementary, Intermediate and Middle Schools

A. General
   1. The System includes the following major items:
      a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment.
      b) Loudspeakers, speaker mounting or support hardware.
      c) Equipment racks and millwork.
      d) Cables, connectors, plates, and wiring.
      e) Preparation of submittal information.
      f) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
      g) Documented sound system tests and adjustments with a written report.
      h) Instruction of operating personnel; provision of manuals.
      i) Maintenance services; warranty.

B. Sound System Description
   1. The Cafetorium sound system shall be a separate and distinct system, connected to the main P.A. and intercom system for override announcement from main system only. The recessed-mounted amplifier cabinet shall be permanently affixed, where shown. The components of each system shall consist mainly of the following:
      a) Amplifier - "Toa" Model W-912A-A flush-box equipped with 120 watt amplifier, two (2)

low impedance mic inputs, one (1) auxiliary input and built-in one-octave equalizer. Provide two (2) extra mic input modules. Provide and install BX-9F Flush Mounting Back Box

b) Speaker Jacks - special "Neutrik" NL4FC jacks, assembled on a one-gang stainless steel plate using fiber insulators to prevent grounding the speaker line.
c) Cafetorium Horn-Speakers - "Pioneer" Model B2OEC82-51FX-Q located as shown on the drawings, 8” coaxial with tweeter unit, 15 watt, 45 to 18000 Hz frequency range
d) Microphones - Furnish two (2) "Shure" SM58S microphone with corresponding plug and cables to match receptacles.
e) Receptacles - Floor Mic Receptacles Mounted in Floor Box; "Switchcraft" J3FS, one-gang stainless steel plate with female XLR mic receptacle.
f) Assistive Listening Devices - Fifteen (15) assistive listening devices for Sound System complete with all transmitters, etc., required for ADA compliance
g) Assistive listening system transmitter mounted in recessed cabinet adjacent to amplifier.
h) Assistive listening system shall be "Phonicear" or approved equal with the following devices:
i) PE560T - Transmitter in recessed cabinet
j) ATO757 - Transformer
k) ATO541 - Standard headset (number of units as specified)
l) All batteries, wire, cable and accessories to form a complete and workable "ADA" assistive listening system.

27.17 Gymnasium Local Sound System for Elementary, Middle and Intermediate Gymnasiums

A. General
1. The System includes the following major items:
a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment.
b) Loudspeakers, speaker mounting or support hardware.
c) Equipment racks and millwork.
d) Cables, connectors, plates, and wiring.
e) Preparation of submittal information.
f) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
g) Documented sound system tests and adjustments with a written report.
h) Instruction of operating personnel; provision of manuals.
i) Maintenance services; warranty.

B. Sound System Description
1. Rack - "Atlas" WA-202-77B with doors, or approved equal.
2. Mixer/Preamplifier - "TOA" M-900MK2 mixer preamplifier.
3. Equalizer - Parametric Equalizer: Furnish "Sabine" GRQ-3102S and 5-band parametric EU Notch Filter with balanced input and output with security covers
4. Sequential controller - "Soundolier" SACR-191 power controller, complete with security covers and SACS-5 power outlets.
5. Power Amplifiers - Two (2) "Crown" CE2000 dual 450 watt per channel at 4 ohms.
6. Speaker arrays - Two (2) each KDM - SP840A Speaker System for Main Gymnasium or One (1) each KDM - SP840A Speaker System for Practice Gymnasium

C. Program Sources:
1. Two (2) LightSpeed 2000 D true diversity FM wireless microphone systems
2. One (1) each cassette deck, rack-mounted, Denon #DN780R dual well.
3. One (1) each compact disc deck, rack-mounted, TASCAM CD-450.
4. Three (3) uni-directional studio quality microphones complete with phantom power and cables, Shure PG81 Electric Condenser Cardioid

5. One (1) Desk Top Paging Microphone, Shure 522.

D. Accessories:
1. Three (3) each black tripods with boom arms
2. One (1) lectern microphone stand, complete with shock-mount
3. Three (3) each, 25-foot microphone extension cables, complete with connectors

E. Wireless Microphone System:
1. Shure UC wireless mic system with two (2) UC1 body packs and two (2) U2/BETA 58 microphones.

F. Assistive Listening System: Shall be Phonicear or approved equal with the following devices:
1. PE560T - Transmitter
2. Large Area Antenna
3. AT0757 - Transformer
4. AT0541 - Standard Headsets will be provided in the necessary quantities.
5. Alkaline batteries, wire, cable, and all required accessories to form a complete and workable American with Disabilities Act compliant (ADA) assistive listening system
6. AT0534 - Two Unit Chargers will be provided in the necessary quantities.

27.18 Gymnasium Local Sound System for High School Competition Gyms

A. General
1. The System includes the following major items:
a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment.
b) Loudspeakers, speaker mounting or support hardware.
c) Equipment racks and millwork.
d) Cables, connectors, plates, and wiring.
e) Preparation of submittal information.
f) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
g) Documented sound system tests and adjustments with a written report.
h) Instruction of operating personnel; provision of manuals.
i) Maintenance services; warranty.

B. Sound System Description
1. Main Sound System Equipment Rack
a) Locking equipment rack with a locking front door and fan.
b) The rack shall include necessary blank and vented panels to fill any unused space and have theft deterrent screws on all rack equipment.
2. AC Control
a) The sequential power system shall have switched AC receptacles with isolated ground or equivalent. Install 5 switched receptacles in the main equipment rack.
3. Digital Signal Processor
a) Digital signal processor which can be programmed using a Standard PC and Microsoft Windows compatible software program through a standard serial port.
b) The Sound Contractor shall equalize the system using a real-time analyzer, reference microphone and a Microsoft Windows based PC to control all setup of the digital processor.
c) The analyzer, microphone, computer, etc. utilized will remain the property of the Sound Contractor.
d) The software, serial cable, and a disk backup up the setup parameters determined in testing are to be turned over to the Owner.
4. System Power Amplifiers
a) Four 450W/8 amplifiers to power system speakers.
5. Main Mixer
a) Eight channel mixer. This unit will be installed in the main equipment rack and will

connect to all gym wall input plates including the input for the remote cart

6. Portable Control Equipment Cart
   a) Portable remote control mixing and source rack for use at the announcer's location. The portable unit will store loose equipment. The portable unit will house the CD/tape player, 8-channel mixer, wireless receivers and a custom interface plate with 4 additional microphone connections and 2 RCA auxiliary connections for other Owner provided sources. Theft deterrent screws, or equivalent on all rack equipment.
   b) Eight channel mixer. This unit will be installed in the portable equipment rack.
   c) CD Player/Tape Deck with rack mounts.
   d) Desk microphone push to talk switch and mic stand.
   e) Handheld wireless mic system.
   f) Lavaliere wireless mic system or equivalent.
   g) Input plate and interface from portable cart in the gym to the main equipment rack mixer.
7. Competition Gymnasium Loudspeakers
   a) 14 cabinet speakers. Speakers will be mounted to the bottom cord of the gym roof truss aimed for best coverage. Four of these speakers are to mount above the court and project downward.
8. Additional Equipment
   a) Two Dynamic Cardioid microphones with on/off switch
   b) Three 25 foot and 50 foot microphone cables
   c) Three professional full-height floor stands
9. Assistive Listening System
   a) Wireless hearing assistance system or equivalent with rack mount hardware and 6 additional personal receivers. Provide an antenna mounted in the gym rafters for this system.
   b) In-wall cabinet for the assisted listening
10. Sound System Cable Requirements
    a) All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.
    b) Microphone cable shall be 1 pair 22 gauge twisted shielded West Penn 452 or equal.
    c) Underground microphone and audio cable will be West Penn Aqua Seal or equal as required.
    d) Competition Gym speaker wiring shall be 12 gauge West Penn 296 cable. Football field speaker wire shall be 12 gauge THHN.
11. Testing and Equalization
    a) The completed sound system is to be tested for compliance with the specifications.
    b) The testing and equalization work shall be performed after installation has been completed, but prior to any use of the system.

27.19 High School Practice Gymnasium Sound System

A. General
   1. The System includes the following major items:
      a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment.
         1) Loudspeakers, speaker mounting or support hardware.
         2) Cables, connectors, plates, and wiring.
         3) Preparation of submittal information.
         4) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
         5) Documented sound system tests and adjustments with a written report.
         6) Instruction of operating personnel; provision of manuals.
         7) Maintenance services; warranty.

B. Main Equipment

1. Wall Mixer
   a) 120W in-wall mixer-amplifier with microphone input modules as required to interface with input plates indicated on drawings. Auxiliary input jack at the wall amplifier for the connection of Owner provided music sources.
2. Gymnasium Speaker Cluster
   a) One central speaker cluster system with 16” woofer/midrange plus compression horns and drivers
3. Assisted Listening System
   a) Wireless hearing assistance system mounted in an in wall cabinet adjacent to the amplifier. Antenna installed in the gym rafters.
      1) In-wall cabinet for the assisted listening
4. Additional Equipment
   a) One Dynamic Cardioid microphone with on/off switch or equivalent.
   b) One 25 foot microphone
   c) One professional full-height floor stands
      1) An auxiliary input jack at the in-wall amplifier for the connection of a customer provided music source.
5. Sound System Cable Requirements
   a) All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.
   b) Microphone cable shall be 1 pair 22 gauge twisted shielded West Penn 452 or equal.
   c) Underground microphone and audio cable will be West Penn Aqua Seal or equal as required.
   d) Competition Gym speaker wiring shall be 12 gauge West Penn 296 cable. Football field speaker wire shall be 12 gauge THHN.
6. Testing and Equalization
   a) The completed sound system is to be tested for compliance with the specifications.
   b) The testing and equalization work shall be performed after installation has been completed, but prior to any use of the system.

27.20 Practice Football Field Sound System

A. General
   1. The System includes the following major items:
      a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment as necessary in a portable equipment case.
      b) Loudspeakers mounted on the light poles adjacent to the home and visitors bleachers.
      c) Cables, connectors, plates, and wiring.
      d) Preparation of submittal information.
      e) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
      f) Documented sound system tests and adjustments with a written report.
      g) Instruction of operating personnel; provision of manuals.
      h) Maintenance services; warranty.

B. Main Equipment
   1. Speakers
      a) Four 2-way, horn-loaded co-axial, weather resistant speakers with transformer mounted the speaker at 30 feet above ground on each pole by the visitor and home side bleachers.
      b) Cable for this system shall be 12 gauge THHN.
      c) Speaker connection plate in Hoffman weather proof box at the home side bleacher. The plate shall have a panel mount jack for connection to the portable head gear rack.
   2. Portable Equipment Rack

a) Portable equipment rack for the mixer and amplifier to drive the permanently mounted football field speakers
b) Six-space rack with wheels and luggage handle
c) Eight channel mixer with two mic input modules and one aux input module.
d) Dual channel 300W/8? amplifier
e) Custom input/output panel for connections of two microphones, one aux input and one Neutrik Speakcon output jack.
f) One desk announcer's mic with XLR connector
g) One 20 foot, 16 gauge speaker cord with Neutrik Speakcon connectors

3. Sound System Cable Requirements
   a) All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.
   b) Microphone cable shall be 1 pair 22 gauge twisted shielded West Penn 452 or equal.
   c) Underground microphone and audio cable will be West Penn Aqua Seal or equal as required.
   d) Competition Gym speaker wiring shall be 12 gauge West Penn 296 cable. Football field speaker wire shall be 12 gauge THHN.
4. Testing and Equalization
   a) The completed sound system is to be tested for compliance with the specifications.
   b) The testing and equalization work shall be performed after installation has been completed, but prior to any use of the system.

27.21 Baseball and Softball Field Sound Systems

A. General
1. The system will include the following major items and will be a separate dedicated system for each baseball and softball field. :
   a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment
   b) Loudspeakers.
   c) Cables, connectors, plates, and wiring.
   d) Preparation of submittal information.
   e) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
   f) Documented sound system tests and adjustments with a written report.
   g) Instruction of operating personnel; provision of manuals.
   h) Maintenance services; warranty

B. Main Equipment
1. Equipment Rack
   a) Wall-mount rack in the press box as shown
   b) 240W rack mount mixer-amplifier with six mic/line inputs, two auxiliary line inputs.
   c) Rack-mount power conditioner
   d) UHF wireless handheld microphone system.
   e) CD/tape player
   f) Digital sound processor with security covers to equalize and protect the system by limiting the overall gain
2. Speakers
   a) Four 2-way, horn-loaded co-axial, weather resistant speakers with transformers or equivalent on each individual press box. Speakers mount at the front corner of the press box.
   b) Speaker disconnects jack plates at each speaker to allow removal of the speaker during the off season.
3. Sound System Cable Requirements
   a) All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.

b) Microphone cable shall be 1 pair 22 gauge twisted shielded West Penn 452 or equal.
c) Underground microphone and audio cable will be West Penn Aqua Seal or equal as required.
d) Competition Gym speaker wiring shall be 12 gauge West Penn 296 cable. Football field speaker wire shall be 12 gauge THHN.

4. Testing and Equalization
a) The completed sound system is to be tested for compliance with the specifications.
b) The testing and equalization work shall be performed after installation has been completed, but prior to any use of the system.

27.22 High School Cafetorium Sound System

A. General
1. The System includes the following major items:
a) Audio mixers, equalizers, amplifiers, program sources, and other audio signal processing equipment. Auxiliary input jack at the wall amplifier for the connection of Owner provided music sources.
b) Loudspeakers, speaker mounting or support hardware.
c) Cables, connectors, plates, and wiring.
d) Preparation of submittal information.
e) Installation in accordance with the contract documents, manufacturer's recommendations, and all applicable code requirements.
f) Documented sound system tests and adjustments with a written report.
g) Instruction of operating personnel; provision of manuals.
h) Maintenance services; warranty.

B. Main Equipment
1. Mixer
a) 120W in-wall mixer-amplifier with microphone input modules as required to interface with input plates indicated on drawings.
2. Speakers
a) 6” ceiling coaxial loudspeaker. Speakers shall be interfaced to Public Address Communications System via throw-over relay when in-wall amplifier is inactive. Provide speaker quantity as shown on drawings
3. Microphones
a) Wall mount microphone receptacles.
b) Two -25’ microphone cables.
c) Two Microphones and two microphone stands.
d) Remote input plate for interface of Owner supplied audio sources to the system. Required interface modules in the amplifier.
4. Assisted Listening System
a) Wireless listening assistance system or equivalent with remote antenna and four receivers. Transmitter base station in wall cabinet adjacent to the amplifier.
b) Flush mount wall cabinet to house the assisted listening system transmitter as required adjacent to amplifier in Cafeteria
5. Sound System Cable Requirements
a) All cable shall have labels on both ends utilizing self-laminating, flexible vinyl film and non-smear nylon marking pens.
b) Microphone cable shall be 1 pair 22 gauge twisted shielded West Penn 452 or equal.
c) Underground microphone and audio cable will be West Penn Aqua Seal or equal as required.
d) Competition Gym speaker wiring shall be 12 gauge West Penn 296 cable. Football field speaker wire shall be 12 gauge THHN.
6. Testing and Equalization
a) The completed sound system is to be tested for compliance with the specifications.
b) The testing and equalization work shall be performed after installation has been

completed, but prior to any use of the system.

DIVISION 28 -- ELECTRONIC SAFETY AND SECURITY

28.1 Overview

A. The following are guidelines for the implementation of physical security systems including intrusion, surveillance and access control for new construction and renovations. These guidelines are provided to assist security consultants in developing the various security systems to provide for the future needs of the Owner. This document is not intended to cover every aspect of the installation and design of the physical security systems but should provide a solid foundation to develop the framework for security implementation throughout Owner's buildings.

28.2 Intrusion Alarm Systems

A. Every Owner educational facility is protected with an intrusion alarm system. It is managed and monitored by the Owner Police Department. The security consultant will work closely with the Police Department at all times during the design and installation phase of this system.

B. Keypad locations will be coordinated with Owner PD. Depending on the size of the building, multiple locations may be required. Coordinate all zoning activities with MSID PD. Keypads will be located in vestibule areas or other areas where Owner staff can access them in a quick and efficient manner.
   1. Keypad rough in will be served with a 1" conduit and a single gang back box. Back box heights will conform to the American Disabilities Act (ADA) for reachable height. Conduits will stub out into the nearest accessible ceiling space and will have a protective bushing applied to the end of each conduit.

C. The manufacturer of the intrusion system will be provided during the design phase.

D. Motion sensors are an integral part of the intrusion system and will be deployed throughout the building in conjunction with the Owner surveillance systems. Coordination between the surveillance and intrusion or with the access control systems may be required.
   1. Motion sensors may consist of ceiling mounted and wall mounted sensors. The consultant will determine, with the Owner police department the best sensor for the particular area of the facility.
   2. At no time will a point (motion, door contact, glass break, etc.) be looped or connected to another point. Each point will be named specifically for the area it is installed (NW front exterior door, NE hallway motion, Kitchen serving line motion, etc.).

E. For new construction post 2010 all exterior door contacts will be part of the access control system.
   1. Additions and renovations to existing facilities may require additional door contacts and will be added to the existing intrusion alarm system.
   2. Door contacts will be flush mount and coordinated with the door frame construction.
   3. Surface mounted contacts may be used for existing doors that lack the proper internal conduit pathway.
   4. Roll up doors requiring surface contacts will ensure the contacts are placed away from the paths of wheeled vehicles. Wiring pathways will be protected at all times. The use of flex innerduct (armored loop) for floor mounted surface contact may be considered.

F. All communication panels will be located in the Main Distribution Frame or MDF room. This is a telecommunication space dedicated to the support of telecommunications and security systems. Coordinate panel locations with the Owner Police and Technology Departments. Multiple panel locations may be required depending on the size of the facility. Facilities with multiple panels will collapse back to the main panel located in the MDF.
   1. Intrusion alarm systems will be backed up with a battery operated power supply to provide support for up to 8 hours during a power outage.

G. All internal and external siren locations will be coordinated with the Owner Police Department.

28.3 Access Control Systems

A. The access control system will be designed and coordinated with the Owner Facilities department and other Owner personnel as required.
   1. Exterior and interior doors will use Intellikey access control system.

B. Request to exit devices for new construction will be coordinated with the door hardware contractor, built into the door's panic hardware and provided under the door hardware contract. It will be the responsibility of the access control contractor to completely wire these devices into the system.
   1. Ceiling mounted request to exit devices may be used for any door location that does not require panic hardware for egress. Locations such as interior rooms, MDF, IDF, office doors leading to the vestibule should be coordinated with Owner Police, Facilities and Technology Departments. External REX devices will always be the responsibility of the security contractor.
   2. Exterior doors leading to riser, mechanical, electrical and other rooms that do not enter into the main facility will not require request to exit devices. These doors will be monitored for open/close activity only.

C. Additional components such as motion sensors, glass breaks may be integrated into the access control system. Coordinate these devices with the Owner Police Department.

28.4 Surveillance

A. The Owner standard for their Video Management System (VMS) is to be determined during design.

B. Camera types:
   1. Owner uses fixed in the Owner. Fixed cameras are mainly used in the interior spaces to monitor common areas, hallways, bathroom entrances, exterior doors and other areas deemed sensitive by the Owner Police, Facilities and Technology Departments. Coordinate all camera locations with these three entities and with additional Owner staff as directed.
   2. Coordinate the specific camera manufacturer camera with the Owner Facilities Departments. Owner prefers Advidia Cameras

C. All video storage devices will be centralized in the DATA Center at 3904 Ave T. 77550. Coordinate storage requirements with Owner Technology Department.

D. Cameras mounted on parking lot light pole locations may be utilized for new construction projects. The security consultant will discuss this option with the Owner and plan the proper pathways and electrical power to each light pole. Reference the pathways section of this document for recommended conduit sizes.

E. Coordinate all surveillance layouts with the Technology Department and the civil engineer and landscape engineer to reduce the possibility of conflicts with landscape vegetation.

28.5 Pathways

A. All installed cable shall be supported by approved pathway materials including cable tray, conduit, saddles or J-hooks.

B. Access control and intrusion cabling will not share the same pathways with the telecommunications pathways. Cabling for surveillance cameras will be installed by the Div. 27 contractor and are not part of this spec.

C. Plastic tie wraps are not allowed onsite at any time by the security contractor. Cable will be bundled with hook and loop (Velcro) straps only.

D. Cable shall be supported from MDF or IDF rooms to device location by J-hooks. J-hooks shall be installed at a distance to insure that cable is supported within standards set forth by the TIA/EIA and BICSI (48"-60" OC).
   1. J-hooks shall be fastened to approved building structure. Coordinate approved methods with the Owner IT Staff and architectural design team. Do not secure J-hooks to other

trades pathways.

E. 1” conduit shall be installed at each card reader, keypad or other input device location located on a wall. Conduit shall bend 45° above wall and face towards approved cable pathway.

F. All conduits will be protected with a plastic bushing prior to cable rough in.

G. For remote locations requiring access control systems, such as vehicle gates, the consultant will ensure the proper outside plant rated cabling is being used and that the properly sized conduit, no less than an 1 ½” conduit be used.

H. Surveillance cameras at light pole locations will be served with a minimum 1 ½” conduit

I. Pull boxes will be used for outside plant runs to alleviate the strain on the cable during installation. Pull boxes will be spaced depending on the amount of bends used in the pathway.

28.6 Fire Safety

A. Cable:
   1. Cable penetration through fire rated construction must be filled after cable is installed to maintain fire rating of original construction as shown on architectural drawings.
   2. Intumescent sealants, fire blocks, caulking, and all other firestopping materials shall meet the UL standards and local code(s).
   3. Where a cable or bundle of cables penetrates a fire rated construction a conduit shall be provided to pass through that construction. Conduit must be sized for 250% of installed capacity.
   4. Where a cable or a bundle of cables penetrate a fire rated floor, a conduit shall be provided to pass through that construction. Conduit must be sized for 250% of installed capacity.
   5. Conduit may be filled with acceptable firestopping material or an acceptable Intumescent ring may be installed around conduit to maintain fire rating of original construction as shown on Architectural drawings.

B. Cable Rating:
   1. Plenum rated cable must be specified for use in any area of any building where a non-ducted return air system is not in use.

28.7 Administration Standards

A. General:
   1. It is the intent of Owner to mandate that a comprehensive administration system will be provided as an integral part of construction and installation.
      a) The Contractor is responsible for labeling and documentation.
      b) All labels will be permanent and machine generated. Hand-written labels are not allowed.
      c) Access control and intrusion control panels will be labeled for door or device connections
      d) Surveillance camera data locations will be labeled by the Div. 27 contractor installing the cabling. Do not allow labels to be applied to the exterior of a camera that include the device IP address.
      e) A map will be provided by the contractor showing the location of all system components including motions, door contacts, panels, camera locations, access control hardware, power supplies for door hardware, etc.

28.8 Quality Assurance and Testing

A. System Performance:
   1. The consultant will work with the Owner Police Department to ensure the contractor provides all testing and documentation to the Owner.
   2. A final walk thru test will be coordinated with the Owner Police Department for access control and surveillance systems. All areas of each system will be tested in the presence of an employee of the Owner Police Department. Examples of required testing parameters for all physical security systems are as follows:

a) Access Control - Testing of all door locations, readers, door hardware function, alarm events such as forced doors, door held open, are tested and verified with the access control log.
b) Surveillance systems will be tested to ensure proper viewing angles, resolution and storage systems are operational and meet Owner Standards.
c) Intrusion systems will be tested for alarm events, keypad functionality, communications, programming and battery back up.

DIVISION 31 -- EARTHWORK

31.1 References

A. References - EARTHWORK
1. ASTM D 698 - Moisture-Density Relations of Soil.
2. ASTM D 1556 - Density of in Place Soil by Sand-Cone Method.
3. ASTM D 2167 - Density of in Place Soil by Rubber Balloon Method.
4. ASTM D 2216 - Laboratory Test of Soil Moisture Content.
5. ASTM D 2922 - Density of in Place Soil by the Nuclear Method.

B. References - SITE WORK
1. Galveston County Specifications and Standards

C. References - DRILLED PIERS
1. Specifications of the Association of Drilled Shaft Contractors.
2. American Concrete Institute (ACI)
3. ACI 336.1: "Standard Specification for Construction of End Bearing Drilled Piers"
4. ACI 336.3: "Suggested Design and Construction Procedures for Pier Foundations"

31.2 Subterranean Termite Treatment

A. Design of the buildings shall include consideration of Integrated Pest Management principles per the Texas Department of Agriculture Texas Structural Pest Control Service. Examples: Use lighting near building entrances that does not attract insects, place screens over intake air ducts, use door sweeps to physically exclude crawling insects and rodents, etc.

B. Provide soil poisoning to control subterranean termites as recommended in the publication “Proper Pre-Construction Subterranean Termite Treatments” as published by the Texas Structural Pest Control Service.

C. Owner’s Integrated Pest Management Coordinator must give their written approval prior to termiticide applications. A copy of all application/treatment records, a copy of the product label for the termiticide used, a copy of the MSDS form for the product and any other information required by the Texas Structural Pest Control Service must be provided to the IPM coordinator.”

D. Buildings shall be virtually Pest-free upon substantial completion. Construction crews should have designated eating areas to prevent rodents and insects. Contractor shall set bait stations after dry-in is complete and continue to service according to manufacture until the Owner accepts the building.

DIVISION 32 -- EXTERIOR IMPROVEMENTS

32.1 General Requirements

A. Considerations should include the relationship with the permanent building and its circulation: handicapped accessibility, exits, toilets and custodial spaces, visual impact upon the site and neighborhood, code requirements, utility service location, fire protection, including fire lane and hydrant, parking requirements, access from arrival points, impact on ancillary services such as food, library, and recreation. The route of movement of the transportable buildings is an important consideration. The minimum number of transportable buildings per school shall be four (4). Utility rough-in for portables shall be located in such a position that the farthest corner of the portable building is within 100 feet hose pull from the nearest fire hydrant for fire protection. Rough in will include separate conduits for each building and each building will have separate conduits for (a.) electrical service, (b.) public address, fire alarm, communications.

32.2 Paving

A. To conserve land available for green areas, recreational spaces, and future expansion, consider consolidation of drive, parking, and service drives.

B. Layout of drives and parking areas should be in accordance with recognized standards and local authority having jurisdiction requirements for parking space and aisle dimensions. Circulation patterns should be simple and non-confusing. Entrances and exits into parking areas should be located so as not to create a traffic hazard. Consider a 6” concrete paved access fire lane required by Fire Department or local authority having jurisdiction. Preferable standard parking space is 9’x 20’ and drive aisle is 24’ or local authority having jurisdiction requirements, whichever is greater. Painted pavement markings shall utilize chlorinated rubber traffic paint manufactured by Axel Corporation or approved equal. Particular attention shall be paid to turning radius for buses to enter and exit the facility without crossing over lanes.

C. Pavement design should be based on recommendations of the soils engineering report and published weights for the various vehicle classifications. A reinforced concrete apron drive at transition with the street should be provided. All driveways and parking shall be Portland cement reinforced concrete. Consideration may be given to asphalt paving at the parking areas only based on budget constraints. Consideration should be given to a bid alternate for concrete, if asphalt is specified in the base bid. Architect shall check with local jurisdiction having authority to confirm paving requirements. At remodeling projects, asphalt paving is acceptable. Asphalt paving should meet current TxDOT Standards for the traffic type.

D. Establish top elevations of manhole covers and cleanouts flush with pavements; and in grass areas at an elevation, which will allow unobstructed mowing and which will assure good positive drainage.

E. At street unloading zones, where permitted, provide for reinforced concrete sidewalk continuous with curb to permit stepping directly from an auto to an all weather surface. Provide sidewalks along the street frontage of all facilities from property line to property line, including connection to building. If existing drainage system is an open bar ditch, review requirement with Owner staff.

F. Provide lay down curb cuts for access of moving equipment between grassed areas. Coordinate locations with Owner staff.

G. Paved areas shall be provided with curbs and gutters, unless directed otherwise by Owner.

H. Vehicular access to restricted areas or controlled parking areas shall use tubular steel gates. Gates shall cantilever or clear span all openings. Intermediate posts are not allowed. If route is part of a fire lane, contractor shall provide necessary KNOX locks or KNOX boxes. Gate design at Owner stadium is considered an acceptable solution.

I. All paving joints shall be sealed. Contractor will be required to maintain all joints during the warranty period. Contractor will be required to repair and seal pavement cracks during the warranty period.

J. Special consideration shall be given to all entrance sidewalks and paving. Design should minimize the likelihood that paving will buckle and/or move causing the doors to the entrance to not open. Porches and sidewalks immediately located next to entrances shall be integrated into the structural design rather than being independent of the facility. Except as noted in item E above, sidewalks shall not adjoin drives where possible, instead the use of a green space between the sidewalk and drive is preferred. Where sidewalks meet drives, sidewalks will be doweled into curb and at least 6” of crush limestone will be utilized and the first 50’ linear of feet of all sidewalks adjacent to porches and patios will utilize 6” of crushed limestone.

K. A provision for access by the handicapped is required including provisions for drop-off and unobstructed entry into the building from parking area or point of drop off. Ensure grooves in curb ramps do not collect water. Curb ramps shall be dyed concrete or solid material inserts (paint is not acceptable). For specific requirements, refer to the Architectural Barriers Act, Article 9102, Texas Civil Statutes, including the Texas Accessibility Standards (TAS); and the Americans with Disabilities Act, Public Law 101-336, including Part 36 as amended, (ADA).

32.3 Playground and Surfacing Requirements

A. Playground areas vary from campus to campus. Refer to Educational Specifications.

B. All new playground equipment must meet the latest published standards/guidelines for both the American Society for Testing and Materials (ASTM) and the U.S. Consumer Product Safety Commission (CPSC).

C. All equipment installations shall be performed by factory authorized and trained installation personnel and will be completed per ASTM and CPSC standards.

D. Engineered wood fiber is to be used where loose fill safety surfacing is specified. The wood fiber shall comply with ASTM-F-1292 “Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment” and documentation of that compliance shall be furnished to the Owner Maintenance Department.

E. All play areas shall have on-site signage indicating use guidelines for the equipment. Example: “This play area is designed for children 2 to 5 years of age (or 5 to 12, or whatever is appropriate for the area). Adult supervision is recommended.”

F. Play equipment area boundaries (retaining walls) shall be located a minimum of 20’ from any street, driveway, parking lot, etc., where vehicles are likely to drive or park. If they must be located nearer than this, a fence shall divide the area, in its entirety, from vehicular traffic.

G. Play areas requiring fencing shall have the fabric installed on the play equipment side of the fence.

H. Paved play areas at school sites must not be contiguous with vehicular traffic areas. If in close proximity, an adequate barrier should be provided.

I. All playgrounds shall have good positive drainage around play area. Site where equipment is to be installed should be within +/- 3 degrees of level with enough slope to provide drainage of water per manufactures recommendations. Excessive slope will cause safety surfacing to migrate out of play equipment zones.

J. Consideration should be given to provide access of semi-truck with 50’ trailer to deliver wood fiber safety surfacing. Area should include 16’ wide double gates for delivery of wood safety surfacing.

K. Architect will provide options to consider solid surfacing for playgrounds, including sprayed, rolled, and poured in place products.

32.4 Track Surfacing

A. Provide black structural surface at the middle and high school level. Two extra coats of structural spray shall be applied to the two inner most running lanes and the starting blocks and runway.

32.5 Site Security/Fencing

A. Fencing as required by the various city’s ordinances shall be provided in contract. All new fence installations shall be reviewed with Owner to evaluate existing trees and fences that Owner may need to coordinate with adjacent Owners. At a minimum, vinyl coated chain link fencing shall be provided at all perimeter property lines with the exception of the main frontage road entrance. Provide steel gates to allow remote areas of the sites to be secured. Typical perimeter fence height shall be 6’-0”. The use of wood privacy fences will be avoided unless mandated by local authority. The architect will seek a variance to use chain link with privacy slats.

B. Tennis Courts - Vinyl coated fencing and court surfacing shall be provided at the high school level only. Tennis court fences will be designed to use privacy slats, wind blocking nets shall be prohibited; therefore, careful consideration should be given to wind loading of privacy slats in the design of the fencing and support poles.

32.6 Loading Dock/Service Area Requirements

A. Service drives should accommodate long wheelbase trucks approximately 50-60 feet long, including appropriate turning radii. Provide parking for 2 service vehicles near loading docks.

B. Provide separate receiving areas for food service and general deliveries.

C. Provide separate exits for food service and custodial access to dumpster locations.

D. Provide metal bollards at back of dumpster slab. Provide slab area and screening as required by authority having jurisdiction for recycling dumpster and trash dumpster. Dumpster slab should have area drains into the city sanitary sewer system (comply with local codes concerning drainage). Screening gate poles shall be steel construction and set in concrete a minimum depth of 4' feet or at least 50% of the total above grade height, whichever is greater.
   1. Typical dumpster size: 8 cubic yard
      a) Quantity:
         1) Elementary: (2) 8 yd
         2) Intermediate: (3) 8 yd
         3) Middle: (3) 8 yd
         4) High School: (3) 8 yd
         5) Stadium: (3) 8 yd

E. Provide an exterior hose bib at all loading dock locations and dumpster enclosures.

32.7 Irrigation

A. Irrigation System Design Parameters:
   1. System will have a (Combination Flow Meter/Master Valve) that has the capabilities to immediately terminate all irrigation schedules when a High Flow reading occurs.
   2. System will have a Low Flow and Un-Opened Water flow indicator that identifies the faulty zone(s) to the Central Control System.
   3. System will be designed with a single mainline, using the necessary amount of double checks, water meters, and valves required to comply with the application requirements listed in Item B. (Irrigation Operation Parameters). Thrust blocks shall be installed on all mainline. Should the Operations Parameters require the operation of multiple zone valves simultaneously, a Looped Mainline may be used with the addition of additional valves to create individual Flow Zones for better control. Any looped Mainline will have isolation valves designed in the main to prevent a total loss of irrigation capabilities during a major line break.
   4. System will be designed for future utilization of evaporation/transpiration operation. Compatibility with a Davis Instruments weather station is required.
   5. With the Motorola ICC (Irrigation Central Control) System, there is no on-site irrigation controller for stand- alone operation. The on-site system will be capable of being programmed by a central computer at the Owner maintenance building using the Owner's standard Motorola ICC System.
   6. The Motorola controller will communicate to the ICC Base Station at the Owner maintenance building via a Motorola two-way radio system.
   7. System will have a rain / freeze sensor at each site.
   8. System will have individual zones designed to irrigate athletic turf, landscape beds and other turf areas separately.
   9. Irrigation zones will NOT utilize rotor and spray heads in any single zone.
   10. System will be completely programmed at the central controls to communicate with the on-site irrigation controllers through the Motorola ICC System. All field data is to be collected by the contractor and provided to the Owner for programming by Owner staff or the central control manufacturer.
   11. All proposed control systems will be approved by Owner before bid. System and installer shall have a proven operational history and references.

B. Irrigation Operation Parameters:
   1. Precipitation: 1.5" per week for lawns and plantings; Athletic fields: 2" per week.
   2. Water Frequency: 5 Days / Week
   3. Available Time: 8 hours (10:00 p.m. to 6:00 a.m.) Low volume drip and/or bubblers may operate out of the prescribed window.
   4. Seasonal Conditions: Peak irrigation demand during the summer school break shall hold

to the identified parameters. Discretion is given to operation, not the design of the system unless otherwise approved by the Owner.

5. Pump: 75 hp max. each pump
6. Water Rate: 500 gpm max. each pump
7. The Owner is to be notified if the design does not require the use of an irrigation pump.

C. Irrigation materials (i.e., sprinkler heads, control boxes and valves) shall be approved by Owner.
   1. Rotors:
      a) Large Rotors: Hunter I-25 with required nozzle
      b) Small Rotors: Hunter PGP with required nozzle, Hunter PGJ if needed
      c) Swing joints will be installed with Rotors.
   2. Sprays: Hunter 4" Pro Spray
      a) Nozzle: MPR series -- no VAN series.
      b) SAM shall be utilized in locations with low-point drainage or as dictated by the Owner.
      c) All pop-up sprays shall be attached by ½" or ¾" swing joints, Hunter SJ 506.
   3. Low Volume Drip: Netafim Techline CV with all necessary components. Use only where mandated by law.
   4. Tree Bubbler: RWS series
   5. Solenoid Valve: Irritrol
   6. Quick Coupling Valve: Rainbird with locking rubber cover with preceding ball valve.
   7. Ball Valve: Lasco
   8. Valve Box: Ametek (square for valves / round for wire splices)
   9. Rain Sensor: Hunter
   10. Temperature Sensor: Hunter
   11. Temporary Controller: Contractor will provide controller(s) for irrigation purposes during construction and remove controller(s) upon completed installation of Motorola ICC System.
   12. Master Valve/ Flow Meter: Arad Hydrometer:
   13. Master Control System: Motorola ICC
   14. Stand Alone Clocks: Hunter ICC, Hunter Pro C as needed.

D. Provide athletic irrigation materials as follows:
   1. No irrigation mainline or valve shall be located within the field-of-play. Provide either hose bibs or underground waterline with quick-couplers, including shut off isolation valves, in boxes with lockable covers a grade level for athletic facilities. Verify quantity and location with Owner.
   2. Softball Field:
      a) Provide spray heads along each baseline to the far corner of the dugout as separate zones.
      b) An additional zone of spray heads (15H) shall follow the infield to outfield transition.
      c) Quick-couplers (4) will be located near each base within the turf area, location verified with Owner.
      d) Provide rotors Hunter I-25 in the outfield with appropriate nozzle.
      e) Provide spray heads to each pitcher warm-up area as separate zone.
   3. Baseball Field:
      a) Provide spray heads along each baseline to the far corner of the dugout as separate zones.
      b) An additional zone of spray heads (15H) shall follow the infield to outfield transition.
      c) Quick- couplers (4) will be located near each base within the turf area, location verified with Owner.
      d) Provide rotors Hunter I-25 in the outfield with appropriate nozzle.
      e) Provide spray heads to each pitcher warm-up area as separate zone.
   4. Football Field:
      a) Provide 5 rows of rotors Hunter I-25 from inside edge of track to inside edge of track.

b) Provide rotors on hash lines.
c) Set watering sequence to water from the middle of the field out.
d) Locate all valves beyond the end zone.
e) All zone lateral lines shall be aligned to run with the field.

5. Practice Fields:
   a) Provide a rotor layout that is symmetrical from sideline to sideline and avoids a head location in the soccer goal or goalie box.
   b) Locate all valves beyond the end zone or sideline fence.
   c) All zone lateral lines shall be aligned to run with the field.
6. Shot Put:
   a) Provide rotor coverage with no head located within 50 foot of the pad.
7. Controller Location:
   a) The controller for the athletic fields shall be located in the vicinity of the athletic fields grounds equipment storage room at high school, mechanical or other dedicated room with direct outside door and not intended for student/faculty use.

E. Irrigation systems shall be automated and compatible with the Owner's Motorola ICC System including the Arad Hydrometer flow sensor if not provided on pump. Irritrol valve shall be plumbed to serve as a safety valve. Provide temporary controllers for use during construction.

F. Irrigation lines shall be jetted to prevent settling.

G. Irrigation control boxes shall be installed in mechanical or electrical rooms accessible from the exterior.

H. Design Consultant shall consider utilizing well water service installations for irrigations systems.

I. Provide either hose bibs or underground waterline with quick-couplers, including shut off isolation valves, in boxes with lockable covers at grade level for athletic facilities. Verify quantity and location with Owner.

J. Provide pavement marking in concrete curbs (saw cut of two parallel lines 2-inches in length and 1-inch apart) designating the location of all irrigation sleeving.

K. All ground valve boxes shall be supported by a 2 inch thick solid paver that extends beyond the limits of the box bottom.

L. Manifolding of valves shall not be permitted

M. Triangular head spacing shall be incorporated through all areas of coverage.

N. All rotors shall have head-to-head coverage

O. Rotor part circle head coverage shall be zoned separately from rotor full circle head coverage.

P. System will have individual zones designed and grouped to irrigate athletic turf, landscape beds and other turf areas separately.

Q. The Owner is to be notified if the design does not require the use of an irrigation pump prior to design completion.

R. Deviations from any part of this irrigation section should have the Owner approval and documented in writing.

32.8 Landscaping

A. Owner's project budgets for new facilities and additions include costs related to landscaping and irrigation.

B. The Architect/Engineer should initially determine scope of the landscaping and irrigation during the schematic design phase based on the Preliminary Project Budget and presented to Owner and the appropriate city with jurisdiction for review and approval. The scope of the landscaping and irrigation shall be finalized during the design development phase and included in a detailed estimate of construction cost presented to Owner. Landscape and Irrigation construction documents shall be signed and stamped by a Professional Architect/Engineer.

C. The city has specific requirements related to landscaping and irrigation in their

Development Code.

D. Where landscaping is being provided at an existing campus (i.e., an addition), the plant material selection should generally conform to complement existing plant material.

E. Use of native drought resistant plant material is required. Plant material requiring excessive irrigation or maintenance shall be avoided. Design should be based on the most extreme water restrictions imposed by city requirements.

F. Ground cover shall be planted in such a manner and quantity that full coverage can be achieved within 12 months.

G. All tree and plant material shall be readily adaptable to area soils, reasonably disease resistant, and require low maintenance. Tree and plant material shall be approved by Owner. The use of Bald Cypress trees and other water intensive trees is prohibited.

H. All trees shall require a minimum of three (3) stakes. All trees and planting areas shall be properly mulched to a depth of two (2) inches. Trees located on elementary and intermediate school sites shall be staked at the base using tree root / tree ball stakes. Post and guy wires will not be permitted in these areas.

I. Tress shall be planted to allow a minimum of 11’-0” between tree and any object to allow for lawn equipment. Trees shall not be placed in close proximity to sidewalks where buckling is likely to occur due to tree growth. Trees will not be placed within 30’ of building.

J. Where existing turf areas are to be converted to bed or planting areas, the turf shall be chemically eradicated to minimize re-growth in the future. These areas shall be properly prepared with amended organic matter.

K. All new turf areas located on the front, sides, rear, and inside the fire lane shall be sodded and shall be amended with quality topsoil at a minimum depth of four (4) inches. Detention ponds shall be hydromulched and shall be amended with quality topsoil at a minimum depth of four (4) inches. All playfields and areas adjacent to play fields shall be sodded. Owner will review and approve all areas to receive hydro-mulch.

L. Final grades shall be smooth and consistent at proper elevations prior to seeding or sodding.

M. Sloped areas shall maintain a grade to provide safe operation of six (6) foot wide mowing equipment.

N. Areas with slopes of 4:1 or greater shall be landscaped to be stable, provide for erosion control and special protective measures shall be implemented. These measures shall be reviewed with Owner Maintenance.

O. Athletic fields and other competition areas shall be sodded with 419 Bermuda grass. Playfields and other areas shall be sodded with common Bermuda grass. Detention ponds and other approved areas shall be hydromulched with common Bermuda grass.

P. Hydromulch or seeding requirements:
   1. Bermuda grass: 3lb / 1000 s.f. minimum
   2. Rye grass: 10lb / 1000 s.f. minimum
   3. Buffalo grass: 10lb / 1000 s.f. minimum
   4. Hydromulch shall be completed between April 15 and June 15. Athletic field turf shall be installed to provide for one complete year of growth prior to use.

Q. All athletic fields shall be crowned properly to provide good drainage, and baseball and softball fields shall be crowned to drain to sideline areas.

R. Contractors and sub-contractors for athletic fields shall have prior experience in constructing athletic fields and shall provide references upon request.

S. Athletic fields in conjunction with track will provide for positive drainage off of the track and onto the field where it is collected and discharged in the storm drainage system. Rain water or irrigation overspray shall not pond on the track.

T. Access for maintenance equipment to athletic fields shall be considered in fencing and gate locations and sizes. Typical maintenance gate: Pair 6’-0”.

U. All landscape must be maintained and grass mowed/ edged on a weekly schedule until acceptance by Owner.

V. Consideration shall be given to maintenance requirements of tree islands. Turf will be used in lieu of ground cover and mulch where appropriate. Crushed granite and other small diameter, compactable, and stable materials will be considered.

DIVISION 33 -- UTILITIES

33.1 General Requirements

A. Where electrical high power transmission lines occur on a site, buildings shall be located a minimum distance of 300 feet from the right of way (ROW). The Owner discourages the installation of fences, and underground metallic piping within 100 feet of the ROW. Any variance from this requirement will require written approval from the Owner.

33.2 Site Drainage

A. All roof drainage shall be collected in an underground drain system and diverted away from the building.

B. Avoid routing storm sewer lines and utility lines under the building structure and under reinforced concrete pavement.

C. Careful attention should be given to planning the location and detailing of utility service entrances and service equipment such as, stacks, grease traps, manholes, cleanouts, hose bibs, valves, service vaults, transformers, backflow preventers, and gas and water meters. A successful design requires a careful balance of aesthetics, functional operating features and cost.

D. Materials for site utilities shall be as approved on the local municipality.

E. Careful consideration shall be given to avoid drainage near playground equipment. Drainage must be routed away from playground equipment and safety surfacing.

33.3 Site Utilities

A. Avoid routing utilities other than interior service under the building structure.

B. Careful attention should be given to planning the location and detailing of utility service entrances and service equipment such as, stacks, grease traps, manholes, cleanouts, hose bibs, valves, service vaults, transformers, gas and water meters. A successful design requires a careful balance of aesthetics, functional operating features and cost.

C. Provide steel pipe bollards around all electric transformers, gas regulators or meters where exposed to vehicular traffic.

Table of Standards

	PROGRAM OF SPACES			EQUIPMENT AND TECHNOLOGY															FINISHES										
	Size (No Less Than)	Quantity (No Less Than)	Total	Equipment						Built-in casework					Technology				Floors										
				Lockers	Markerboard	Tackboard	Interactive Board	Projection Screen/Wall	Stainless Steel Tables, Shelving	Base cabinets w/counter	Wall cabinets	Tall storage cabinet	Cubbies	Built-in shelves	Phone	PC	Fixed TV	Projector	Carpet Tile	Ceramic Tile	Polished/Stained Concrete	Resilient Flooring	Resinous	Rubber	Sealed Concrete	Terrazzo	Quarry Tile	Masonite	Wood
Stadium																													
Concession Building																													
Serving	48"	6															●								●				
Food Preparation and Hold	800	1	800						●																●				
Food Storage	300	1	300						●			●													●				
General Storage	300	1	300									●													●				
Ticket and Restroom Building																													
Ticket Office	55	2	110																						●				
Mens Restoom	250	2	500																						●				
Women's Restroom	600	2	1200																						●				
Family Restroom	60	2	120																						●				
Custodial	60	2	120																										
Press Box																													
Film Deck	60	1	60																						●				
Home Coaches	90	1	90							●									●										
Radio	60	1	60							●									●										
Video Control	60	1	60							●									●										
Administration/VIP	60	1	60							●	●						●		●										
Visitor Coach	90	1	90							●									●										
Storage	70	1	70									●													●				
Custodial	60	1	60																						●				
Mechanical	60	1	60																						●				
Mens Restroom	60	1	60																	●									
Womens Restroom	60	1	60																	●									
Break/Food Service	120	1	120							●	●			●								●							
IDF	60	1	60																						●				
Elevator	60	1	60																			●							
Field House																													
Coach Office (Home)	200	1	200														●								●				
Coaches Shower (Home)	100	1	100	●																●									
Coaches Restroom (Home)	100	1	100																	●									
AD Office	100	1	100												●	●	●					●							
AD Restroom	60	1	60																	●									
Reception	200	1	200											●	●	●	●								●				
Training	180	2	360																						●				
Laundry	220	1	220											●											●				
Offical's Dressing	100	2	200																										
Coach Office (Visitor)	200	1	200														●								●				
Coaches Shower (Visitor)	100	1	100	●																●									
Coaches Restroom (Visitor)	100	1	100																	●									
Locker Room	850	2	1700	●	●																		●		●				
Locker Room Shower, Restroom	325	2	650																	●									
Locker Room Storage	50	2	100											●											●				
Field Equipment Storage	120	1	120									●													●				
Field Groomer Storage	120	1	120									●													●				
IDF	60	1	60																						●				
Electrical	60	1	60																						●				

	FINISHES											MECHANICAL, ELECTRICAL AND PLUMBING													OPENINGS								
	Partitions							Ceiling				Mechanical			Electrical					Plumbing					Doors						Windows		
	CMU	Ceramic Tile	Folding Partition	Glass Wall	Gypsum Wall	Markable Wall	Acoustical Wall Treatmen	Exposed Structure	Acoustical Ceiling Tile	Gypsum Board	Ceiling Height - Min/Max	Exhaust to exterior	Fume Hood	Dust Collection System	Duplex	Quad	Data/Voice	Controls for multiple light levels	Specialty	Sink	Natural Gas	Drinking fountain	Eye Wash & Shower	Floor drain	Aluminum	Hollow Metal	Wood w/plastic laminate	Roll-up, Exterior	Roll-up, Interior glass/grill	View Lite	Interior	None	Daylighting
Stadium																																	
Concession Building																																	
Serving	●							●			9/10	●				12	7									●		●					●
Food Preparation and Hold	●							●			9/10				4	12				●				●		●						●	
Food Storage	●							●			9/10				2		1									●						●	
General Storage	●							●			9/11				2		1									●						●	
Ticket and Restroom Building																																	
Ticket Office	●							●			9/10				1		1									●		●					●
Mens Restoom	●							●			9/10	●								●				●		●						●	
Women's Restroom	●							●			9/10	●								●				●		●						●	
Family Restroom	●							●			9/10	●								●		●		●		●						●	
Custodial											9/10	●				1				●				●		●						●	
Press Box																																	
Film Deck					●				●		9/10				2	4	4										●			●			●
Home Coaches					●				●		9/10				2	2	6										●			●			●
Radio					●				●		9/10				2	2	4										●			●			●
Video Control					●				●		9/10				2	2	4										●			●			●
Administration/VIP					●				●		9/10				2	2	4										●			●			●
Visitor Coach					●				●		9/10				2	2	6										●			●			●
Storage					●				●		9/10					1											●					●	
Custodial					●				●		9/10					1				●							●					●	
Mechanical					●				●		9/10					2											●					●	
Mens Restroom		●			●				●		9/10	●								●							●					●	
Womens Restroom		●			●				●		9/10	●								●							●					●	
Break/Food Service					●				●		9/10				2	2	1			●						●						●	
IDF					●				●		9/10				2	2											●					●	
Elevator											9/10																					●	
Field House																																●	
Coach Office (Home)	●							●			9/10				4	2	6									●				●		●	
Coaches Shower (Home)	●	●						●			9/10													●		●						●	
Coaches Restroom (Home)	●	●						●			9/10	●			1					●				●								●	
AD Office	●								●		9/10				2	1	2									●				●			●
AD Restroom	●	●							●		9/10	●			1					●				●		●						●	
Reception	●								●		9/10				2	2	2					●				●				●			●
Training	●							●			9/10				2	2	2			●						●				●		●	
Laundry	●							●			9/10	●			4	2				●				●		●				●		●	
Offical's Dressing	●	●						●			9/10	●			2		2			●				●		●						●	
Coach Office (Visitor)	●							●			9/10				4	2	6									●				●		●	
Coaches Shower (Visitor)	●	●						●			9/10													●		●						●	
Coaches Restroom (Visitor)	●	●						●			9/10	●			1					●				●								●	
Locker Room	●							●			9/10	●			4									●		●						●	
Locker Room Shower, Restroom		●						●			9/10	●			2					●				●								●	
Locker Room Storage	●							●			9/10																					●	
Field Equipment Storage	●							●			9/10				4	1								●		●						●	
Field Groomer Storage	●							●			9/10				2	1												●				●	
IDF	●							●			9/10															●						●	
Electrical	●							●			9/10															●						●	

Exhibit E

General Conditions

The following list includes items that the Contractor shall be compensated as Project General Conditions as a set percentage of the Actual Cost of Work as defined. The General Conditions are the only place this work shall be billed. The following list of General Conditions are in addition to, and do not supersede requirements of AIA A141-2014, as modified by the Owner for the Project.

1. Contractor Personnel as proposed for the Project, to the extent time is directly attributable to the furtherance of the Work. Positions may include:

a. Wages or salaries of the Contractor's supervisory and administrative personnel when stationed at the site and performing Work

b. Wages and salaries of the Contractor's supervisory or administrative personnel engaged at factories, workshops or while traveling, in expediting the production or transportation of materials or equipment required for the Work

c. Senior Project Manager/Project Executive

d. Project Manager including vehicle and/or allowance/mileage

e. General Superintendent

f. Superintendent including vehicle and/or allowance/mileage

g. Assistant Superintendent

h. Project/Cost Engineer

i. Project Expediter / Asst. Project Manager

j. Field Office Personnel

k. Office/Technology Engineer

l. Quality Control Manager

m. Safety Coordinator

n. Building Information Modeling staff

2. Temporary Services and Support:

a. Costs of transportation, storage, installation, dismantling, maintenance, and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Contractor at the site and fully consumed in the performance of the Work

b. Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by the Contractor at the site, and the costs of transportation, installation, dismantling, minor repairs, and removal of such temporary facilities, machinery, equipment, and hand tools

c. Temporary Utilities for CM's Trailer

d. All utilities required through Substantial Completion

e. Construction entrance(s)

f. Telephone, Fax, Computer, Copier Costs (monthly rental costs)

g. Internet service

h. Temporary Plumbing

i. Subsistence/Per Diem
j. Dumpsters
k. Job Signage/Advertising
l. Fire Protection/Fire Extinguishers
m. Temporary Weather Protection
n. Barricades, fall protection
o. Building and Site dewatering
p. Job Safety Training
q. Traffic control rental and barricades rental
r. Traffic Direction (Police Oversight)
s. Temporary chemical toilets
t. Temporary utilities for construction

u. Field Offices and Construction Supplies:

i. Drinking water, ice cups
ii. Delivery Service / Postage
iii. Mobilization and Demobilization of Field Office
iv. Monthly office furnishings and equipment
v. Computers and software
vi. Monthly Office rental costs
vii. Project Office cleaning costs
viii. Stationery and Supplies
ix. Costs of document reproductions and delivery charges

v. Storage
w. Progress Photography (Photos/Video)
x. Project Shop Drawings
y. Small Tools
z. Cell phones
aa. Vehicles and mileage
bb. CPM Schedule
cc. Project management software
dd. Project documentation and document reproductions
ee. Field Communications System / Radios
ff. Field Engineering Equipment and supplies
gg. Generators – portable
hh. Temporary Heating - portable
ii. Project As-Builts / Record Drawings
jj. First Aid Supplies
kk. Safety Equipment
ll. Security System
mm. Badging / Identification
nn. Criminal background checks

3. Construction:

a. Mobilization / Demobilization
b. Transportation
c. Field Engineering / Layout
d. General Purpose Labor / Labor Burden
e. All-weather construction mats
f. Construction site cleaning and trash haul-off
g. Clean Streets
h. Equipment Rental, Maintenance & Insurance
i. Fuel, Oil & Grease for Construction Equipment
j. Final Cleaning of Project

4. Fee for profit

EXHIBIT F

Prevailing Wage Rates – School Construction Trades

Effective: June 12, 2019

Texas Gulf Coast Area

CLASSIFICATION	2019 HOURLY RATE
ASBESTOS WORKER	$18.00
BRICKLAYER; MASON	$18.98
CARPENTER; CASEWORKER	$18.90
CARPET LAYER; FLOOR INSTALLER	$19.80
CONCRETE FINISHER	$13.90
DATA COMM/TELE COMM	$22.58
DRYWALL INSTALLER; CEILING INSTALLER	$16.40
ELECTRICIAN	$25.50
ELEVATOR MECHANIC	$31.50
FIREPROOFING INSTALLER	$19.17
GLAZIER	$19.67
HEAVY EQUIPMENT OPERATOR	$21.00
INSULATOR	$14.90
IRONWORKER	$23.00
LABORER, HELPER	$11.75
LATHERER; PLASTERER	$18.60
LIGHT EQUIPMENT OPERATOR	$13.25
METAL BUILDING ASSEMBLER	$16.33
MILLWRIGHT	$26.30
PAINTER; WALL COVERING INSTALLER	$14.67
PIPEFITTER	$25.17
PLUMBER	$31.00
ROOFER	$15.10
SHEET METAL WORKER	$20.25
SPRINKLER FITTER	$20.61
STEEL ERECTOR	$23.33
TERRAZZO WORKER	$16.42
TILE SETTER	$15.30
WATERPROOFER; CAULKER	$14.90

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

Prevailing Wage Rate Determination Information

The following information is from Chapter 2258 Texas Government Code:

Sec. 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.

Sec. 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.

Sec. 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

Worker Classification Definition Sheet

CLASSIFICATION	DEFINITION
ASBESTOS WORKER	Worker who removes and disposes of asbestos materials.
BRICKLAYER; MASON	Craftsman who works with masonry products, stone, brick, block, or any material substituting those materials and accessories.
CARPENTER; CASEWORKER	Worker who build wood structures or structures of any material which has replaces wood. Includes rough and 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 COMM/TELE COMM	Worker who installs data/telephone and television cable and associate equipment and accessories.
DRYWALL; CEILING INSTALLER	Worker who installs metal framed walls and ceiling, drywall coverings, ceiling grids, and ceilings.
ELECTRICIAN	Skilled craftsman who installs or repairs electrical wiring and devices. Includes fire alarm systems and HVAC electrical controls.
ELEVATOR MECHANIC	Craftsman skilled in the installation and maintenance of elevators.
FIREPROOFING 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-hoes, back-fillers, power operated shovels, winch trucks, and all trenching machines.
INSULATOR	Worker who applies, sprays, or installs insulation.
IRONWORKER	Skilled craftsman who erects structural steel framing, and installs structural concrete Rebar.
LABORER, HELPER	Worker qualified for only unskilled or semi-skilled work. Lifting, carrying materials or tools, hauling, digging, clean up.
LATHERER; PLASTERER	Worker who installs metal framing and lath. Worker who applies plaster to lathing and installs associated accessories.
LIGHT EQUIPMENT OPERATOR	Includes but not limited to , air compressors, truck crane drivers, flex planes, building elevators, form graders, concrete mixers less than 14cf), conveyers.
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, and align pumps.
PAINTER; WALL COVERING INSTALLER	Worker who prepares wall surfaces and applies paint and/or wall coverings, tape, and bedding.
PIPEFITTER	Trained worker who installs piping systems, chilled water piping and hot water (boiler) piping, pneumatic tubing controls, chillers, boilers, and associated mechanical equipment.
PLUMBER	Skilled craftsman who installs domestic hot and cold water piping, waste piping, storm system piping, water closets, sinks, urinals, and related work.
ROOFER	Worker who installs roofing materials, Bitumen (asphalt and coal tar) felts, flashings, all types of roofing membranes, and associated products.
SHEET METAL WORKER	Worker who installs sheet metal products, Roof metal, flashings and curbs, ductwork, mechanical equipment, and associated metals.
SPRINKLER FITTER	Worker who installs fire sprinklers systems and fire protectant equipment.
STEEL ERECTOR	Worker who erects and dismantles structural steel frames of buildings and other structures.
TERRAZZO WORKER	Craftsman who places and finishes Terrazzo
TILE SETTER	Worker who prepares wall and/or floor surfaces and applies ceramic tiles to these surfaces.
WATERPROOFER; CAULKER	Worker who applies water proofing material to buildings. Products include sealant, caulk, sheet membranes, and liquid membranes, sprayed, rolled or brushed.

EXHIBIT G

PROJECT MANAGEMENT SOFTWARE

PART 1 - G E N E R A L

1.1 DESCRIPTION

A. Owner requires the use of Project Management Software (Software) to track the progress of planning, design, and/or construction contracts. Software is an internet-accessed project tracking application featuring a centralized database of project information, assisting the Owner and Owner's Representative in managing project documents and communications. The joint use of Software is to facilitate electronic exchange of information, key processes, and overall management of the contract.

B. Software shall be the primary means of project information submission and management. All project documentation and correspondence, including, but not limited to, Invoices, Submittals, Architect's Supplemental Instruction, Requests for Information (RFI), Requests for Proposal (RFP), Change Orders, etc. are to betransmitted electronically using Software.

C. Documents requiring original signature will be input into Software, and signed originals are to be received by Owner's Representative on the same day the document is logged in electronically in Software.

D. When required by the Owner or Owner's Representative, paper documents shall also be provided (e.g., the signature of Contract Modifications and submission of Contract Claims). In the event of discrepancy between the electronic version and paper documents, paper documents shallgovern.

E. Documents received that are not input into Software may not be accepted by the Owner and Owner's Representative. **If the documents do not exist in the Software, then they do not exist. The Software is the single source of truth for Project information.**

1.2 USER ACCESS LIMITATIONS

A. The Owner's Representative will control access to Software by allowing access and assigning user profiles to authorized users. User profiles will define levels of access into the system, determine assigned function-based authorizations (what can be seen), and determine assigned user privileges (what can be done).

B. The Owner will provide access to the Software upon notice that Contractor has activated a license with the Software company, thereby creating an authorized user. Sub-consultants, sub-contractors, and/or suppliers will not have direct access to Software unless those entities activate a license with the Software company. The Sub-consultants, sub-contractors, and/or suppliers may purchase seat licenses from the Software company. Entry of information exchanged and/or transferred between authorized users and sub-consultants, sub-contractors, and/or suppliers on Software shall be the responsibility of the authorized users.

C. Owner will not reimburse for the cost of Software. Accounts can be purchased at no additional cost to the Owner by payment to the Software company. Each account will allow one (1) user to access the system per login. Other costs associated with the use of this system shall be evenly distributed in project overhead and spread across the duration of the contract (a separate cost line item shall not be allowed).

D. A minimum of one (1) half day training session on Software will be provided by the Owner to all authorized users as required. Training time shall be at a mutually agreed upon date and site.

E. Data entered in a collaborative mode (i.e., entered with the intent to share as determined by permissions and workflows within the Software system) by any and all authorized users shall be jointly owned.

1.3 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

A. Review comments made (or lack thereof) by the Owner, Owner's Representative, Architect, and/or Engineer on submitted documentation shall not relieve parties from compliance with requirements of the Contract Documents.

B. All parties are responsible for managing, tracking, and documenting work to comply with the requirements of the Contract Documents. Owner or Owner Representative acceptance via automated system notifications or audit logs extends only to the face value of submitted documentation and does not constitute validation of submitted information.

1.4 COMPUTER REQUIREMENTS

A. Authorized users shall use computer hardware and software that meets the minimum requirements of the Software system as recommended by the manufacturer to access and utilize Software. As recommendations are modified authorized users shall upgrade their system(s) as required to meet the minimum recommendations. In the event that cloud-based systems are used, users shall ensure proper browser compatibility. Upgrading of a user's computer system(s) shall not be justification for a cost or time modification to the Contract.

B. Authorized users shall ensure that connectivity to the Software system (whether at the home office or jobsite) is accomplished through high-speed access, as the time required to download information and input data becomes excessive and may cause the system to "time out".

1.5 USER RESPONSIBILITY

A. Authorized users shall be responsible for the validity of their information placed in Software and for the abilities of their personnel. Authorized users shall be knowledgeable in the use of computers, including Internet Explorer, e-mail programs such as Outlook, word processing programs such as Word, spreadsheet programs such as Excel, and Adobe Portable Document Format (PDF) document distribution programs.

B. Authorized users shall utilize existing forms in Software to the maximum extent possible. If a form does not exist in Software and users must include as an attachment or by uploading the data file, PDF documents will be created through electronic conversion rather than optically scanned.

1.6 USER ACCESS ADMINISTRATION

A. All parties shall provide the Owner's Representative with a list of key personnel for acceptance. List shall include authorized users of Software.

B. Notify the Owner's Representative immediately of any users that are to have access removed. Resubmit the personnel list whenever modified. User changes will take effect within one (1) working day of accepting the requested change.

C. The Owner reserves the right to perform a security check on all potential users.

1.7 CONNECTIVITY PROBLEMS

A. Software is a web-based environment and therefore subject to inherent speed and connectivity problems of the Internet. Authorized users provided access shall be responsible for their own connectivity to the Internet.

B. Software response time is dependent on the user's equipment, including processor speed, modem speed, Internet access speed, etc. and current traffic on the Internet. The Owner will not be liable for any delays associated from the usage of Software including, but not limited to slow response time, down time periods, connectivity problems, or loss of information.

PART 2 - P R O D U C T S

2.1 SOFTWARE COMPANY

A. Refer to the attached "External User License Purchase Order" at the end of this document.

B. Pricing: Subject to change

1. Cost for each (1) user license is $695 annually.

2. $100 setup for first year

3. Web-based training is required for new users. Cost for training is $600.

4. Example 1: If order is for 1 user, invoice will be $695 annual subscription (1 user license) plus $100 setup, plus $600 for 1 web-based training session for a total of $1,395.

5. Example 2: If order is for 8 users, invoice will be for $5,560 annual subscription (8 users licenses @ $695 each) plus $100 setup, plus $600 for 1 web-based training session for a total of $6,260.

C. Once payment is made, user account(s) will be added with expiration date after one year unless renewed.

D. Credit cards are accepted with a 4% convenience fee.

E. Texas Sales Tax 8.25%

PART 3 - E X E C U T I O N

3.1 SOFTWARE UTILIZATION

A. Software shall be utilized in connection with submittal preparation and information management. Requirements of this section are in addition to requirements of all other contract requirements. Users will be provided a playbook for full application use instructions.

1. Design Document Submittals: Provide all concept drawings, review phase submissions, contract documents and specifications in PDF format and native file format.

2. Shop Drawings: Shop drawing and design data documents shall be submitted as PDF attachments to the Software submittal workflow process and form. All PDF shop drawing submittal documents shall have the Contractor's review and submittal stamp (including signatures) as specified in Specification Section "Submittal Procedures", the same as if submitted as hard copy. Examples of shop drawings include, but are not limited to:

a. Standard manufacturer installation drawings.

b. Drawings prepared to illustrate portions of work designed or developed by the Contractor.

c. Steel fabrication, piece, and erection drawings.

d. Paving and grading plans

e. Traffic safety and control plan

3. Product Data: Product catalog data and manufacturer's instructions shall be submitted as PDF attachments to the Software submittal workflow process and form, except that color charts and similar color-oriented pages shall be submitted as hard copy separate from and in addition to the PDF copy. Submittal forms shall indicate when hard copy color documents are submitted. All PDF product data submittal documents shall have the Contractors review and submittal stamp (including signatures) as specified in Specification Section "Submittal Procedures", the same as if submitted as hard copy. Examples of product data include, but are not limited to:

a. Manufacturer's printed literature.

b. Preprinted product specification data and installation instructions.

4. Samples: Sample submittals shall be physically submitted as specified in Specification Section "Submittal Procedures". Contractor shall enter submittal data information into Software with a copy of the transmittal form(s) attached to the submittal. Examples of samples include, but are not limited to:

a. Product finishes and color selection samples.

b. Product finishes and color verification samples.

c. Finish/color boards.

d. Physical samples of materials.

5. Administrative Submittals: All administrative submittals shall be recorded within the Software. Examples of administrative submittals include, but are not limited to:

a. Master Schedule

b. List of contact personnel.

c. Plans for safety, demolition, environmental protection, and similar activities.

6. Administrative Processes: All administrative tasks shall be performed within the Software. Examples of administrative processes include, but are not limited to:

a. Requests for Information (RFI).

b. Revision documents (ASI, Clarification, Minor Change).

c. Submittal Register.

d. Field activity and observation reports (including daily reports)

e. Rework Items List, etc.

f. Meeting minutes for quality control meetings, progress meetings, pre-installation meetings, etc.

g. Punchlist

h. Warranty requests and tracking log.

7. Cost and Contract Submittals:

a. Contracts

b. Invoices

c. Applications for Payment

d. Proposal Requests (PR, CPR, or RFP)

e. Change Orders (CO)

f. Allowance Expenditure Authorization (AEA)

8. Compliance Submittals: Test report, certificate, and manufacture field report submittals shall be submitted on Software as PDF attachments. Examples of compliance submittals include, but are not limited to:

a. Field test reports.

b. Quality Control certifications.

c. Manufacturers' documentation and certifications for quality of products and materials provided.

9. Record and Closeout Submittals: In addition to actual delivery of hard copies of Closeout Submittals, Closeout Submittals shall be submitted on Software as PDF documents. Examples of record submittals include, but are not limited to:

a. Consent of Surety

b. Certificate of Completion (substantial, final, compliance)

c. Certificate of Occupancy (temporary, final)

d. Operation and Maintenance Manuals: Final documents shall be submitted as specified.

e. As-built Drawings: Final documents shall be submitted as specified.

f. Release of Lien

g. Warranties

h. Extra Materials, Spare Stock, etc.: Submittal forms shall indicate when actual materials are submitted.

10. Exceptions: Documents with legal consequences, contract modifications, contract claims, security implications, and those required by other agencies may require an additional submittal as original hard copy with original signatures and seals. Hard copies of these documents shall be submitted as specified or as directed by the Owner's Representative. Requirement of both hard and electronic submittals shall not be justification for a cost or time modification to the Contract.

END OF SECTION