Project Manual

FOR

Competitive Sealed Proposal No. 2018-094
MCALLEN ISD FINE ARTS
THEATER EQUIPMENT IMPROVEMENTS PHASE II FOR MEMORIAL, MCALLEN, JAMES "NIKKI: ROWE HIGH SCHOOLS

Prepared for the

McAllen Independent School District

McAllen, Texas

McAllen ISD Board of Trustees
Mr. Daniel D. Vela, Board President
Mr. Marco Suarez, Vice-President
Ms. Sam Saldivar, Jr., Secretary
Mr. Coronado Alvarado, Trustee
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Mr. Tony Forina, Trustee

Dr. Jose A. Gonzalez, Ed. D. McAllen ISD Superintendent

CSP No. 2018-094

STRUCTURAL ENGINEER

CHANIN ENGINEERING, LLC

COPY NO. _____

DATED: _____

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McALLEN INDEPENDENT SCHOOL DISTRICT

REQUEST FOR COMPETITIVE SEALED PROPOSALS

Competitive Sealed Proposal ("CSP") for the work identified below in accordance with CSP documents and addenda as may be issued prior to date of CSP opening will be received by the Board of Trustees, McAllen Independent School District, hereinafter referred to as "Owner," until CSP closing date and time, as identified below. The Owner shall receive, publicly open, and read aloud the names of the Proposers and any monetary proposals made by the Proposers. Not later than the forty-fifth (45th) day after the date on which the proposals are opened, the Owner shall evaluate and rank each proposal submitted in relation to the published selection criteria. The Owner shall select the Proposer that submits the proposal that offers the best value for the governmental entity based on: (1) the selection criteria in the competitive sealed proposal and the weighted value for those criteria in the competitive proposal; and (2) its ranking evaluation. The Owner shall first attempt to negotiate a contract with the selected Proposer. The Owner and its architect or engineer may discuss with the selected Proposer options for a scope or time modification and any price change associated with the modification. If the Owner is unable to negotiate a satisfactory contract with the selected Proposer, the Owner shall, formally and in writing, end negotiations with that Proposer and proceed to the next Proposer in the order of the selection ranking until a contract is reached or all proposals are rejected.

OWNER:	McAllen Independent School District 2000 N. 23rd St. McAllen, TX 78501-6126
PROJECT NAME:	**Competitive Sealed Proposal No. 2018-094 - McAllen ISD Fine Arts Theater Equipment Improvements for Memorial, McAllen, and James "Nikki" Rowe High School Phase II**
PROJECT BUDGET:	**$500,000.00**
CSP OPENING DATE AND TIME:	**August 31, 2018 at 3:00 PM**
LOCATION OF BID OPENING:	McAllen Independent School District Facilities, Maintenance & Operations 4309 Warrior Drive, Bldg B, McAllen, Texas 78501
PRE-BID CONFERENCE DATE/TIME:	**August 20, 2018, 9:00 AM**
LOCATION:	Facilities, Maintenance & Operations 4309 Warrior Avenue, Bldg. B McAllen, Texas
ARCHITECT/ENGINEER:	**Chanin Engineering LLC**
DISTRICT PROJECT MANAGER:	Melissa Rodriguez Project Manager of Facilities, Maintenance & Operations 4309 Warrior Drive, Bldg. B. McAllen, Texas

CSP Documents/Specifications may be obtained online from the **Public Purchase** website at http://www.publicpurchase.com beginning **August 15, 2018. Vendors are responsible for viewing the webpage regularly, or prior to submitting a proposal, to ensure that no addenda or additional information have been issued for the solicitation.**

The Owner reserves the right to reject any and all proposals and to waive any informalities in the proposal process.

No proposal shall be withdrawn within forty-five (45) days after the proposal opening without the specific consent of the Owner.

GENERAL TERMS AND CONDITIONS

1.0 RESPONSIBLE PROPOSERS

1.1 Proposals will be accepted from responsible Proposers only for the entire scope of work described in the Contract documents. As a prerequisite to a Proposer's qualifying for the award of contract on this project, the Proposer must complete each item of the "MISD Contractor's Information Statement Form." The form and other requested information must be submitted with the proposal, no later than the proposal's opening time and date. Facsimile transmittals will not be accepted. All Proposers submitting a proposal are encouraged to attend the CSP opening.

1.2 The primary purposes of the evaluation process will be to:

1.2.1 Gather information for the Owner's evaluation procedure;

1.2.2 Enable the Owner and/or Architect/Engineer to evaluate the proposals.

1.3 In arriving at Proposer's opinion concerning the Proposer's qualifications, the Architect/Engineer will use the same criteria that the Owner will use in determination of the selection of the Proposers.

1.4 Failure to submit the "MISD Contractor's Information Statement Form" by the deadlinewill result in the Proposer's disqualification.

2.0 PROPOSER'S PRESENTATION: The Proposer, by signing and executing this proposal, certifies and represents to the Owner that:

2.1 Proposer has read and understands the CSP documents and Proposer's CSP is made in accordance herewith.

2.2 Proposer has visited the site, familiarized him/herself with the local conditions under which the work is to be performed, and correlated Proposer's observations with the requirements of the proposed contract documents.

2.3 Proposer agrees to comply with use of the Davis Bacon wage rates for Cameron and Hidalgo County. The prevailing rates of wages are the minimums that must be paid in accordance with all applicable laws of the State of Texas and the McAllen Independent School District. These rates can be found by visiting the link on "Attachment A".

2.4 Proposer agrees all work must be in compliance with AHERA.

2.5 Proposer agrees to comply with executive order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented in Department of Labor Regulations (41 CFR Part 60).

2.6 Proposer agrees to comply with the Copeland "Anti-Kickback" Act (18 USD 874) as supplemented in the Department of Labor Regulations (29 CFR, Part 3).

2.7 Proposer agrees contracts, subcontracts, and sub-grants of amounts in excess of $100,000 shall contain a provision which requires compliance with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC 1857 (h), Section 508 of the Clean Water Act (33 USC 1368), Executive Order 11738, and Environmental Protection Agency Regulations (40 CFR Part 15).

2.8 Proposer agrees items must meet all applicable Occupational Safety and Health Administration ("OSHA") standards and regulations; and all electrical items must bear the appropriate listing from UL, Factory Mutual Research Corporation ("FMRC") or National Electrical Manufacturers Association ("NEMA").

2.9 Proposer agrees all contracts awarded by school districts and sub-grantees in excess of Two Thousand Dollars ($2,000.00) for construction contracts and in excess of Two Thousand Five-Hundered Dollars ($2,500) for other contracts which involve the employment of mechanics or laborers, shall include a provision for compliance with Section 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by Department of Labor Regulations (29 CFR, Part 5). Under Section 103 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on

the basis of a standard workday of eight hours and a standard workweek of 40 hours. Work in excess of the eight hours per day or 40 hours per week shall be compensated at a rate of not less than 1 1/2 times the basic rate of pay. Section 107 of the Act is applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to employees' health and safety as determined under Construction, Safety, and Health Standards promulgated by the Secretary of Labor.

2.10 Contracts shall recognize mandatory standards and policies relating to energy efficiency which are contained in the State Energy Conservation Plan issued in compliance with the Energy Policy and Conservation Act (P.L. 94-163).

2.11 Proposer agrees to comply with the requirements outlined in Section 2.12. These requirements are absolute, and any Proposer who subsequently does not agree to comply with these requirements will automatically disqualify him/herself from receiving award of the contract.

2.12 Form 1295. Texas Government Code §2252.908, and the rules issued by the Texas Ethics Commission found in Title 1, Sections 46.1, 46.3 and 46.5 of the Texas Administrative Code, require a business entity to submit a completed Form 1295 to District before Contractor may enter into a contract with that business entity. Form must be completed online. If this is your first time to access the Texas Ethics Commission (TEC), you will be required to create an account and establish a user name and password. This will require for you to have a valid email address and know your email user name and password as you will be required to access your email to validate your identity. After creating a user name and password at TEC, you will log in and begin completing Form 1295. Completing Form 1295 will require a contract number and description, which identifies and ties the form to the District's contract number; this will be, **Competitive Sealed Proposal No. 2018-094 - McAllen ISD Fine Arts Theater Equipment Improvements for Memorial, McAllen, and James "Nikki" Rowe High School Phase II**, which has been assigned to this solicitation.

How to complete Form 1295:

- Go to website: http://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm
- Enter Required information
- Print form
- Submit with proposal

2.13 HB 89: Anti-BDS. Proposer verifies it does and will not boycott Israel during the term of the contract, pursuant to Texas Gov't Code §2270.

2.14 Proposer agrees that:

2.14.1 By submitting a proposal, Proposer represents that the CSO includes only material and equipment specified in the CSP documents and is supplemented, if necessary, for a complete and operating system.

2.14.2 Proposer, sub-Proposers, and/or suppliers shall submit an affidavit stating that no asbestos, PCBs or lead building materials shall be used.

2.14.3 By submitting a proposal, Proposer represents that the proposal includes only firms designated as Acceptable Subcontractors, where subcontract work is involved and where acceptable subcontractors are designated for particular sections or phases of the project.

2.14.4 A Bid bond will be submitted in the form of a Bid bond, postal money order, certified check or cashier's check in an amount not less than **five percent (5%) of the total greatest amount** proposed**, including any applicable alternates/contingency,** payable without recourse to McAllen Independent School District**,** in accordance with Section 7.0.

2.14.5 If awarded, the Proposer shall furnish and pay for a Performance Bond and a Payment Bond in the full contract amount in accordance with Section 8.0. Include this cost in your proposal.

2.14.6 Work on the project will begin immediately upon receipt of signed contract and Notice to Proceed.

2.14.7 Proposer shall carry and keep in full force for the duration of the project.

2.14.7.1 Insurance coverage for Builders' Risk.

2.14.7.2 Workmen's Compensation

2.14.7.3 Comprehensive General Liability

2.14.7.4 Automobile Liability as required by the General Conditions and/or Supplementary General Conditions of the Specifications, as outlined in Section 9.2.

2.14.8 Proposer will participate as a team member in cooperation with the Project Manager.

2.14.9 Proposer will assign a competent full-time superintendent to the project, and the superintendent shall be maintained on the project for the duration of the project, subject only to his/her continuous employment.

2.15 Proposer has not offered, conferred or agreed to confer any pecuniary benefit, as defined by §1.07(a)(6) of the Texas Penal Code, or any other thing of value, as consideration for the receipt of information or any special treatment or advantage relating to this CSP.

2.16 Proposer has not offered, conferred or agreed to confer any pecuniary benefit or other things of value as consideration for the recipient's decision, opinion, recommendation, vote or other exercise of discretion concerning this CSP.

2.17 Proposer has neither coerced nor attempted to influence the exercise of discretion by any officer, trustee, agent or employee of the Owner concerning this CSP on the basis of any consideration not authorized by law.

2.18 Proposer has not received any information not available to other Proposers so as to give the undersigned a preferential advantage with respect to this CSP.

2.19 Proposer has not violated any state, federal, or local law, regulation or ordinance relating to bribery, improper influence, collusion or the like.

2.20 Proposer shall not offer, confer, or agree to confer any pecuniary benefit or other thing of value to any officer, trustee, agent or employee of the District in return for exercising his/her official discretion, power or duty with respect to this CSP.

2.21 Proposer shall not offer, confer, or agree to confer a pecuniary benefit or other thing of value to any officer, trustee, agent or employee of the District in connection with the information, submission, or award of this CSP; the performance, delivery or sale pursuant to this CSP.

3.0 COMPETITIVE SEALED PROPOSAL DOCUMENTS

3.1 CSP Documents include the “Request for Competitive Sealed Proposals” documents, “General Terms and Conditions,” the “Proposal Form,” “Supplier Reference Letter,” project scope (plans and specifications), and the proposed contract documents, including any addenda issued prior to receipt of proposals. The proposal documents for the work consist of the “Standard Form of Agreement Between Owner and Contractor,’ the “ (General Conditions of the Contract for Construction,” (general, supplementary, and other conditions), the drawings, the specifications, and all addenda issued prior to receipt of proposals.

3.2 In addition to documents issued to Proposer, proposal documents will be available at the following location(s) and/or websites.

RGV Associated General Contractors 6918 W. Expressway 83 Harlingen, Texas 956-423-4091 www.rgvagc.org/	Virtual Builders Exchange 4047 Naco Perrin Suite 100 San Antonio, Texas 78217 210-564-6900 www.virtualbx.com	McGraw Hill Construction Doge (bid documents & plans available online only) www.dodgeplans.contruction.com

3.3 **SUBCONTRACTORS**: Subcontractors and Suppliers intending to submit proposals to general construction Proposers are required to prepare their proposal based on a complete set of proposal documents. If after

reviewing the complete set of proposal documents, Subcontractors and Supplier Proposers desire to purchase individual drawings and specification sections for their proposal's convenience, they may do so by ordering the specific drawings and specifications directly from the reproduction company. Proposer purchasing a partial set of proposal documents is responsible for determining exactly which documents he requires and is responsible for all costs associated with printing and delivery. Subcontractors and Suppliers exercising this option must agree to do so on the basis that 1) all documents shall be returned to the Owner/Engineer, without refund, after submitting a proposal and 2) documents shall not be used on other construction projects.

3.4 Awarded Subcontractors and Supplier Proposers may retain their proposal documents until completion of the construction.

3.5 A Pre-Bid conference will be held on **August 20, 2018** at **9:00 AM Central Time.** The location of the conference will be at the **Facilities Maintenance and Operations Training Room**, 4309 Warrior Avenue, Bdlg. B, McAllen, Texas. Representatives of the Owner will be present at this meeting. All Proposers are encouraged to attend.

4.0 COMPETITIVE SEALED PROPOSAL PROCEDURES

4.1 A proposal is invalid if it has not been received at the designated location prior to the time and date for receipt of proposal indicated in the CSP documents, or prior to any extension thereof issued to the Proposers by addenda.

4.2 All requested Alternates shall be proposed. If no change in the Base Bid is required, enter "No Change".

4.3 Prior to the receipt of proposals, addendas will be available/posted online at http://www.publicpurchase.com/mcallenisd,tx and will be available for inspection wherever the proposal documents are kept available for that purpose.

4.4 Proposers are required to submit the proposals on **8 ½ x 11** paper (*no oversized paper, no heavy-duty/glue binding*), in a tabbed format organized **in the following order**:

4.4.1 Bid Bond
4.4.2 "Proposal Form"
4.4.3 "1295 Certificate"
4.4.4 Insurance Certificates
4.4.5 Proposer "Certifications Form"
4.4.6 "W-9"
4.4.7 "Conflict of Interest Questionnaire"
4.4.8 "MISD Contractor's Information Statement Form"
4.4.9 "Supplier's Reference Letters"
4.4.10 "Worker's Compensation Experience Rating"
4.4.11 "OSHA Form 300 Log Of Work Related Injuries And Illnesses"
4.4.12 Safety Program Manual and/or Procedures for current and new employees.
4.4.13 Drug/Alcohol Prevention Policy and/or Procedures
4.4.14 Statement of Resources
4.4.15 Company's Organization and Resumes
4.4.16 Surety Letter
4.4.17 Notarized Financial Statement
4.4.18 Dun and Bradstreet Risk Indicator and Documentation
4.4.19 Proposed Schedule/Timeline

4.5 Proposals will be received only on the "Proposal Form" for the work as indicated by the proposal documents, filled in, and enclosed in a sealed envelope addressed as listed below. **Proposals will only be received at the location listed below.**

Name of Proposer
Project Name
McAllen Independent School District

4.6 The Owner reserves the right to reject any proposal if the evidence submitted by, or investigation of, such Proposer fails to satisfy the Owner that he/she is qualified to carry out the obligations of the contract and to complete the work therein. Conditional proposals will not be accepted.

4.7 The Owner shall select the Proposer that offers the best value based on the published selection criteria, **listed in Section 11.0.**

4.8 The Owner shall select the offeror that submits the proposal that offers the best value for the governmental entity based on: (1) the selection criteria in the request for proposal and the weighted value for those criteria in the request for proposal; and (2) its ranking evaluation.

4.8 The Owner shall first attempt to negotiate a contract with the selected Proposer. The Owner and its engineer and/or architect may discuss options for a scope or time modification and any price change associated with the modification with selected Proposer. If the Owner is unable to negotiate a contract with the selected Proposer, the Owner shall, formally and in writing, end negotiations with that Proposer and proceed to the next Proposer in the order of the selection ranking until a contract is reached or all proposals are rejected.

4.9 A proposal may be withdrawn only upon request by the Proposer or his/her duly authorized representative, provided such request is received by the Owner at the place designated for receipt of proposals and prior to the time fixed for the opening of proposals. A withdrawal of a proposal shall not be effective unless a written confirmation of the withdrawal is received by the Owner at said place within forty-eight (48) hours before the deadline for the opening of proposals. The Bid Bond will be returned with the proposals if withdrawn in accordance with the above. The withdrawal of a proposal does not prejudice the right of the Proposer to file a new proposal at the time and place stated. No proposal may be withdrawn after the deadline for the opening of proposals for a period of forty-five (45) days.

4.10 **REJECTION OF COMPETITIVE SEALED PROPOSAL:** The Owner shall have the right to reject any or all proposals and to reject a proposal not accompanied by any required bid security, or by other data required by the CSP documents or to reject a proposal which is in any way incomplete or irregular.

4.11 Proposers submitting a proposal shall not discuss this CSP with employees of District/Owner or members of the Board of Trustees of the District/Owner. Failure to abide by this requirement may result in disqualification. Communication includes, but is not limited to; unsolicited literature, email, faxes or phone calls related to any aspect of the CSP. If discussion is necessary, you will be notified in writing. Failure to abide by this requirement will result in automatic disqualification of the agent/company representative and/or the company at the discretion of the Owner.

5.0 INTERPRETATION OF COMPETITIVE SEALED PROPOSAL DOCUMENTS

5.1 Proposers and sub-Proposers requiring clarification or interpretation of the CSP documents shall be made in written form submitted through the "Q & A" option located within the solicitation posted on the **Public Purchase** website at http://www.publicpurchase.com/mcallenisd,tx no later than **August 24, 2018.** Do not contact the Architect/Engineer or Project Manager. All communication for this CSP should be directed through the Purchasing department via the "Q & A" option on Public Purchase.

5.2 Any interpretation, correction or change of the CSP documents will be made by addendum and posted on the Public Purchase website http://www.publicpurchase.com/mcallenisd,tx. Interpretations, corrections or changes of the CSP documents made in any other manner will not be binding.

6.0 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

6.1 The materials, products and equipment described in the CSP documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. The materials and equipment named in, and the procedures covered by these specifications have been selected as a standard because of quality, particular suitability or record of satisfactory performance. It is not intended to preclude

the use of equal or better materials or equipment provided that same meets the requirements of the particular project and is approved in an addendum as a substitution prior to the submission of proposals.

6.2 No substitution will be considered prior to receipt of proposals unless written request for approval has been received by the Owner and/or Project Manager at least seven (7) calendar days prior to the date for receipt of proposals. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. The Owner's/Project Manager's decision of approval or disapproval of a proposed substitution shall be final.

6.3 If the Owner/Engineer approves any proposed substitution prior to receipt of proposals, such approval will be set forth in an addendum. Proposers shall not rely upon approvals made in any other manner.

6.4 No substitutions will be considered after the Contract award.

7.0 BID BOND/BID GUARANTEE

Bid Bonds are required for bids/proposals in excess of Twenty-Five Thousand dollars ($25,000). A Bid Bond will be submitted in the form of a Bid Bond, postal money order, certified check or cashier's check in an amount not less than **five percent (5%) of the total greatest amount bid/proposal, including any applicable alternates/contingency,** payable without recourse to McAllen Independent School District. Failure to furnish a bid guarantee in the proper form and amount by the time set for opening may be cause for rejection of the proposal. If the awarded Proposer, upon acceptance of Proposer's proposal by the District within the period specified therein for acceptance, fails to execute such further contractual documents, if any, and give such bond(s) (i.e., performance bonds, payment bonds, delivery, etc.) as may be required within the time specified; ten (10) calendar days if no period is specified, after receipt of the forms by him, then he shall be liable for any cost of procuring the work which exceeds the amount of Proposer's proposal, and the proposal guarantee shall be available toward offsetting such difference.

8.0 PERFORMANCE BOND AND PAYMENT BOND

8.1 Performance bonds are required for bids/proposals in excess of One Hundred Thousand Dollars ($100,000). Payment Bonds are required for bids/proposals in excess of Twenty-five Thousand Dollars ($25,000).

8.2 When a performance or payment bond is required, the amounts shall be for 100% of the contract amount **(including contingency)**. Any required bond(s) must be filed with the District within ten (10) days from the date of the Notice Of Award.

8.3 The only forms of surety acceptable as a performance or payment bond are: Cashier's Check, Certified Check, or a Surety or Blanket Bond from a company chartered or authorized to do business in Texas. Bonds completed (signed) by an out-of-Texas surety require a counter signature by a Texas resident agent of a company chartered or authorized to do business in Texas.

8.4 Bonds and other forms of surety must be made payable to McAllen Independent School District.

8.5 Bonds in excess of One Hundred Thousand Dollars ($100,000.00) must be from a surety that holds a Certificate of Authority from the United States Department of Treasury or have reinsurance for liability in excess of One Hundred Thousand Dollars ($100,000.00) from a United States Treasury listed reinsurer.

8.6 Payment and Performance Bonds must be in accordance with Texas Government Code 2253.

9.0 INSURANCE

9.1 Each Proposer shall include complete cost for insurance required under the "General Terms and Conditions" and any Supplementary Conditions with the proposal.

9.2 Proposer shall carry and keep in full force for the duration of the project the following coverages:

9.2.1 Workers' Compensation – Statutory Limits.

9.2.2 Employer's Liability:

9.11.1.1 Bodily Injury by Accident - $500,000 Each Accident.

9.11.1.2 Bodily Injury by Disease - $500,000 Each Employee.

9.11.1.3 Bodily Injury by Disease - $500,000 Policy Limit.

9.2.3 Commercial General Liability (Premises Operations, Independent Contractors, Products/Completed Operations, Personal Injury, Contractual Liability, Explosion, Collapse, Underground and Broad Form Property Damage) – Combined Single Limit for Bodily Injury and Property Damage of $1,000,000 per Occurrence.

9.2.4 Comprehensive Automotive Liability - $1,000,000 Combined Single Limit per Occurrence.

9.2.5 Owner's Protective Liability Insurance Policy – The successful Proposer must obtain an owner's liability insurance policy, at Proposer's expense, naming the District and its employees insured with the following limits: Bodily Injury - $1,000,000 Each Occurrence and $1,000,000 Aggregate.

9.2.6 All policies shall contain special endorsements to include:

9.2.6.1 The District as an additional insured (except for Workers' Compensation).

9.2.6.2 Waiver of subrogation in favor of the District under the Workers' Compensation and Employers' Liability policies.

9.2.6.3 A statement that a notice shall be given to District by certified mail thirty (30) days prior to cancellation or upon any materials change in coverage.

9.3 Workers' Compensation Insurance Coverage.

9.3.1 Definitions:

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

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

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

9.3.2 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.

9.3.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

9.3.4 If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

9.3.5 The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

9.3.5.1 a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

9.3.5.2 no later than seven 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.

9.3.6 The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

9.3.7 The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

9.3.8 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.

9.3.9 The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

9.3.9.1 provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;

9.3.9.2 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;

9.3.9.3 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;

9.3.9.4 obtain from each other person with whom it contracts, and provide to the contractor:

9.3.9.4.1 a certificate of coverage, prior to the other person beginning work on the project; and

9.3.9.4.2 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;

9.3.9.5 retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

9.3.9.6 notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

9.3.9.7 contractually require each person with whom it contracts, to perform as required by paragraphs 9.3.9.1 - 9.3.9.7, with the certificates of coverage to be provided to the person for whom they are providing services.

9.3.10 By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of 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.

9.3.11 The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

10.0 DELEGATION

In accordance with Texas Government Code Section 2269, The Board of Trustees, as appropriate, has delegated its authority under this subchapter regarding an action authorized or required by this subchapter to be taken by a school district to Dr. Jose Gonzalez, McAllen Independent School District Superintendent. In procuring the construction services, the Board of Trustees has delegated the Superintendent the authority to determine, prior to advertising, the project delivery/contract award method to be used for each construction contract valued at or above $50,000. The Superintendent shall submit the resulting contract to the Board for approval. McAllen ISD Board Policy CV(Local).

11.0 EVALUATION CRITERIA AND RELATIVE WEIGHTS

In determining the Awarded Proposer, the evaluation committee, comprised of Ruben Treviño, Executive Director of Facilities, Maintenance & Operations; Melissa Rodriguez, Project Manager of Facilities, Maintenance & Operations; Alejandra Gonzalez, Director of Purchasing, and Nora Tijerina, Senior Buyer, will evaluate the responses and information submitted on the Bid Form, Contractor's Information Statement Form and other bid documents in regards to the following criteria:

Texas Government Code 2267.055 (a)(1) The price.

11.1 Proposed construction contract price (base price plus alternates). Contract price shall include both base price and total alternate price. Final weighted distribution between base Price and total of alternates will be a calculated percentage. (Maximum Points 60)

Texas Government Code 2267.055 (a)(2) The offeror's experience and reputation.

11.2 Provide three (3) references identified in Criteria Item No. 11.5-11.6, list of current or past projects completed within the past five (5) years of similar scope and size that MISD Administrative staff may contact to ascertain to the following points (Maximum Points 3.00)
- The quality of the work provided by your company;
- Company's history of providing warranty documents;
- Company's history of timeliness in completing warranty work;
- Company's history of staying on schedule;
- Company's cooperative attitude when working with the owner and its architect in resolving construction issues;
- Company's history of providing detailed documentation and a fair assessment of change order pricing;
- Company's history of repeat business with owner(s);

11.3 List all claims, judgments, arbitration proceedings or suits pending or outstanding against your company or its officers. Summarize the nature of the claims. (Maximum Points 1.00)

11.4 List current or past MISD projects completed within the past five (5) years of similar scope and size where you have been the "Prime Contractor". (Maximum Points 1.00)

11.5 List three (3) current or past K-12 projects completed within the past five (5) years of similar scope and size where you have been the "Prime Contractor". (Maximum Points 3.00)

11.6 List current or past Non K-12 projects completed within the past five (5) years of similar scope and size where you have been the "Prime Contractor". (Maximum Points 3.00)

11.7 List three (3) references provide Supplier Reference Letters from major suppliers and/or sub-contractors within the past two (2) years which specifically address your company's history of paying sub-contractors and material providers on time. (Maximum Points 3.00)

Texas Government Code 2267.055 (a)(3) The quality of the offeror's goods or services.

11.8 List company's history of on-time project completion based on response to questions No. 4-6 of the **MISD Contractor's Information Statement Form.** (Maximum Points 3.00)

11.9 List company's history of repeat business with project owner(s) for similar scope and size based on response to question No. 9 of the **MISD Contractor's Information Statement Form.** (Maximum Points 1.00)

Texas Government Code 2267.055 (a)(4) The impact on the ability of the district to comply with rules relating to historically underutilized businesses. (Not applicable to School Districts)

Texas Government Code 2267.055 (a)(5) The offeror's safety record.

11.10 Attach "Workers Compensation Experience Rating" for the **last three (3) years** and the corresponding letter from your insurance agent. (Maximum Points 3.00)

11.11 Attach "OSHA Form 300 Log of Work-Related Injuries and Illnesses" for the **last three (3) years**. (Maximum Points 3.00)

- Number of injuries and illnesses
- Number of lost time accidents
- Number of recordable cases
- Number of fatalities
- Number of employee direct hire fixed hours worked (round to 1,000's)

11.12 Attach your company's safety program manual and/or procedures for current and new employees (Maximum Points 2.00)

11.13 State the fequency safety inspections are conducted for projects. (Maximum Points 1.00)

11.14 Attach company's drug/alcohol prevention policy and/or procedures. (Maximum Points 1.00)

Texas Government Code 2267.055 (a)(6) the offeror's proposed personnel

11.15 Indicate if company will utilize 100% of your own forces and describe the sufficient resources your company has to manage staff and successfully perform the work. If joint venture or other type of arrangement, describe type of arrangement and list the subcontractor(s) and trade(s) that will be assigned to this project. (Maximum Points 1.00)

11.16 List names of the individuals who will be assigned for the duration of the project (i.e., Project Manager, Assistant Project Manager, Project Superintendent, Assistant Project Superintendent and MEP Quality Control Specialist). Include their job titles, job descriptions/responsibilities, and attach resumes that address the following: (Maximum Points 2.00)

- Amount of time assigned to project;
- Years of experience;
- Relevant K-12 experience;
- Certifications

Texas Government Code 2267.055 (a)(7) Whether the offeror's financial capability is appropriate to the size and scope of the project

11.17 Attach a letter from surety company addressing the following points: (Maximum Points 2.00)

Surety Company

- Listed in the State Board of Insurance, Bond Department's "List of Insurance Companies Licensed to Write Fidelity and Surety Bonds in Texas.
- Is authorized to do business in Texas and is authorized to do business up to the limit of the contract.
- Holds a certificate of authority from the U.S. Secretary of Treasury or has obtained reinsurance for any liability in excess of $100,000.
- AM Best Rating

Contractor

- Maximum bonding limit.
- Aggregate/total available limit of coverage.
- Single limit coverage.
- Years doing business with sutety.

11.18 List projects that your company currently has in progress. For each project listed address the following points. (Maximum Points 1.00)

- Name of project;
- Owner's contact person and phone number;
- Architect, Architect's contact person and phone number;
- Contract amount;

- Percent complete;
- Scheduled completion date;
- List total worth of work in progress and under contract.

11.19 Attach a **notarized** and **current** financial statement. (Maximum Points 2.00)

For all business entities other than publicly held corporations, please provide the following:
Attach a financial statement. Financial Statement must address the following points:

- Preferably audited;
- Proposer's organization's latest balance and income statement showing current assets, net fixed assets, other assets, current liabilities and other liabilities;
- Indicate name and address of firm preparing financial statement, and date thereof;
- If the financial statement is not for the identical organization submitting offer, explain the relationship and financial responsibility of the organization whose financial statement is provided (parent, subsidiary, etc.)

11.20 List company's Dun & Bradstreet risk indicator and attach documentation. (Maximum Points 1.00)

11.21 Submit Bond in mandated form as per Section 7.0 of the CSP. (Maximum Points 1.00)

Texas Government Code 2267.055 (a)(8) Any other relevant factor specifically listed in the request for bids or proposals.

11.22 Attach a proposed project schedule/timeline. (Maximum Points 2.00)

12.0 AWARD OF CONTRACT

12.1 The Awarded Proposer to will be promptly notified. If a Proposer (a) withdraws his/her proposal within forty-five (45) days after the date of time fixed for the opening of proposals in the Request for Competitive Sealed Proposal, or (b) fails or refuses to execute the Agreement, or other required forms within ten (10) calender days after the same are presented to him for signature, or (c) fails or refuses to furnish properly executed Performance Bond and required Insurance Certificates within ten (10) calendar days of Notice of Award, the Owner may award the work to another Proposer or Proposers or, if applicable, may call for new proposals.

12.2 The Proposer will be required to (a) submit his/her proposal and Bid Bond, (b) execute Contract and Performance and Payment Bonds, and (c) submit Certification of required insurances.

12.3 Bid Bond is forfeited if bid/proposal is withdrawn after the CSP opening, or contract documents are not executed in accordance with the above.

13.0 SUBMISSION OF POST COMPETITIVE SEALED COMPETITIVE INFORMATION

13.1 The Awarded Proposer shall within three (3) days after the Board of Trustees approves the award submit the following:

13.1.1 A designation of the work to be performed by the Proposer with his/her own forces.
13.1.2 An experience profile of the selected Proposer's superintendent scheduled to work on this project. In addition, the apparent selected Proposer shall cooperate with the Owner, supplying requested information to substantiate the qualifications of the Superintendent. If, in the opinion of the Owner, the superintendent does not qualify, the Owner may request the submission of another Superintendent and more information. The Owner reserves the right to reject the apparent selected Proposer if an acceptable superintendent is not presented.
13.1.3 A list of names of subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for such portions of the work as may be designated in the proposal documents or, if no portions are so designated, the names of the subcontractors proposed for the principal portions of the work.
13.1.4 The selected Proposer shall within five (5) days thereafter submit a statement of costs for each major item of work included in the proposal. Each section of specifications will be considered a major item of work and shall be shown as a separate cost item.

14.0 NOTICE TO PROCEED

14.1 The Proposer shall not commence work under this Contract until he receives the written “Notice to Proceed, ” a Purchase Order, and the Contract is fully executed by all parties.

15.0 COMPLETION TIME

15.1 The Owner has a critical need for the work to begin on **October 01, 2018** and be substantially complete by **March 30, 2019.**

15.2 Having thoroughly familiarized himself with the conditions as they exist at the building sites and acquainted himself with the labor supply and the material market, the Proposer will state in the proposal that they agree to be substantially complete with the work by the date above.

15.3 Under the Base Bid, the Awarded Proposer will be subject to liquidated damages of $**300.00** per calendar day for failure to substantially complete work by **March 30, 2019** or as amended by the final signed contract.

15.4 The definition of “Substantial Completion,” as defined in Article 9.8.1 of the AIA “General Conditions and Supplementary Conditions” bound herein, is as follows: “Substantial Completion is the stage in the progress of the Work or designated portion therof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use”.

16.0 RETAINAGE AND PROJECT CONTINGENCY

16.1 Contracts equaling a total amount of $400,000.00 or over will bear a retainage of five (5) percent (%) on each partial disbursement. Contracts totaling less than $400,000.00 will bear a retainage of ten (10) percent (%) on each partial disbursement.

16.2 Proposer shall provide in final price, a project contingency in the amount of **$30,000.00**

17.0 ASBESTOS, LEAD AND PCBs CONTAINING MATERIALS

17.1 The use of any construction process or the installation of any asbestos, lead and PCBs or material containing asbestos, lead and PCBs is strictly prohibited for this Project.

17.2 Prior to submitting a proposal, Proposers shall notify the Project Manager, in writing, of any materials in these specifications which are known to contain or are likely to contain asbestos, lead or PCBs.

17.3 Prior to payment of retainage and final payment the Proposers shall furnish a notarized statement certifying that no asbestos, lead and PCBs containing materials have been used in the Project.

17.4 In addition to the Proposer’s notarized statement, the Subcontractors will be required to furnish notarized affidavits that no asbestos, lead, and PCBs containing products have been used in this Project.

18.0 AVAILABILITY OF MATERIALS AND SYSTEMS

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

18.2 Decisions regarding allowance items will be made in a timely manner to avoid construction delays.

19.0 USE OF ASBESTOS FREE MATERIALS, PRODUCTS AND SYSTEMS

19.1 The Proposer is reminded to refer to the section above for requirements during the proposal period and the following requirements during performance of the work regarding the use of asbestos free materials, products and systems in the project.

19.2 Since many materials, products and systems are proprietary, it is not possible to know all of the materials or components which go into producing such material, product or system without the manufacturer divulging trade secrets or patent information. Every effort has been made to specify materials, products or systems, which either as an "off the shelf" material, product or system or as a custom material, product or system do not contain asbestos.

19.3 It is the Proposer's responsibility to submit an affidavit from the manufacturer to ascertain that every material, product or system used in the project does not contain asbestos. In the event the material, product or system is found to contain asbestos, the Proposer shall offer for the Project Manager's consideration a substitution which he knows does not contain asbestos.

19.4 Even though a material, product or system is specified or a specification is based on a particular material, product or system, the Proposer will not be relieved from the responsibility to ascertain that materials, products and systems used in the Project do not contain asbestos. Under no circumstances shall a material, product or system which is known, suspected or found to contain asbestos be used on the project.

19.5 If a material, product or system containing asbestos is used, the Proposer shall remove and replace the material, product or system with one which is asbestos free at no additional expense to the District/Owner, including removal and replacement of other materials affected by the removal of the asbestos bearing material, product or system, i.e. gypsum wallboard removed, replaced, and repainted on account of insulation being removed, etc.

ATTACHMENT A
DAVIS-BACON PREVAILING WAGES
FOR CAMERON AND HIDALGO COUNTY
Source: http://www.access.gpo.gov/davisbacon/tx.html

Contractor shall obtain current wage Decision from the webpage listed above. Hidalgo County, Texas for Construction Type Building and Residential

ATTACHMENT B
CONTRACTOR CERTIFICATION FORM

CONTRACTOR CERTIFICATION FORM
(Return signed form with your submittal)

1. Felony Conviction Notification

Texas Education Agency Code, Section 44.034, Notification of Criminal History, Subsection (a), states, "A person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony." Subsection (b) states, "A school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for services performed before the termination of the contract." This notice is not required of a publicly held corporation.
Initial where applicable.

☐ A. My company is a publicly held corporation; therefore, this reporting requirement is not applicable.

B. My company is not owned nor operated by anyone who has been convicted of a felony.

C. My company is owned and operated by the following individual(s) who has/have been convicted of a felony:
Name of Felon(s): _____

Details of Conviction(s): _____

2. Criminal History Record Information Review of Certain Contract Employees

By signing below, the Bidder agrees to comply with Section 22.0834. Criminal History Record Information Review of Certain Contract Employees, Texas Education Code if awarded a contract through this solicitation. The undersigned Bidder, if awarded a contract, shall obtain criminal history record information through the criminal history clearinghouse as provided by Section 411.0845, Government Code relating to an employee or applicant who has or will have continuing duties related to the contracted services; and the employee or applicant has or will have direct contact with students. The Bidder agrees to certify of the receipt of criminal history record information before or immediately after employing or securing the services of the employee or applicant that has or will have continuing duties related to the contracted services if the employee or applicant has or will have direct contact with students. The Bidder further agrees that if awarded a contract, shall assume all expenses associated with the criminal background check and shall immediately remove any employee or agent who was convicted of a felony or misdemeanor involving moral turpitude, as defined by Texas law, from District property or the location where students are present.

☐ None of my employees and any of my subcontractors has or will have continuing duties related to the contracted services; and has or will have direct contact with students. I further certify that my company has taken precautions or imposed conditions to ensure that my employees and any subcontractor will not have continuing duties related to the contracted services; and will not have direct contact with students throughout the term of the Contract.

OR

☐ Some or all of my employees and/or my subcontractors will have continuing duties related to the contracted services; and will have direct contact with students. I further certify that:

1. I have obtained all required criminal history record information regarding all of my employees and/or my subcontractors. None of my employees and/or my subcontractors has any conviction or other criminal history information if at the time of the offense, the victim was under 18 or enrolled in a public school: (a) a felony offense under Title 5, Texas Penal Code; (b) an offense for which a defendant is required to register as a sex offender under Chapter 62, Texas Code of Criminal Procedure; or (c) an equivalent offense under federal law or the laws of another state. **If available, attach a copy of your FAST Pass Receipt.**
2. If I receive information that any of my employees and/or subcontractors subsequently has a reported criminal history, I will immediately remove the covered employee from contract duties and notify the District in writing immediately.
3. I will provide the District with the names and any other requested information regarding any of my employees and/or subcontractors so the District may obtain criminal history record information if awarded a contract.
4. If the District objects to the assignment of any of my employees and/or subcontractors, I agree to discontinue using the individual to provide services to the District.

3. Debarment and Suspension (Executive Orders 12549 and 12689)

By signing below Contractor certifies that neither it nor its principals are currently listed on the government-wide exclusions in SAM as debarred, suspended, or otherwise excluded by agencies or declared ineligible under statutory or regulatory authority other than Executive Order 12549. Contractor further agrees to immediately notify the District if he/she is later listed on the government-wide exclusions in SAM, or is debarred, suspended, or otherwise excluded by agencies or declared ineligible under statutory or regulatory authority other than Executive Order 12549.

4. Confidential/Copyrighted Information

By signing below, the Contractor agrees, if a bid is, or parts of bid is confidential, the Contractor has specified by stamping in bold letters the term **"CONFIDENTIAL"** on all or the confidential part of the bid. The bid may be considered public information even though all or parts are marked confidential. Furthermore, Contractor agrees a copyrighted bid is unacceptable and will be disqualified as unresponsive.

5. Declaration of Business Location - Texas Education Code 44.031(b)(8)

By signing below, Bidder certifies the Bidder's or the Bidder's ultimate parent company or majority owner:

☐ A. Has its principal place of business in the State of Texas; **OR** ☐ B. employs at least 500 persons in the State of Texas

☐ C. Principal place of business is not in the State of Texas: _____
(City, State)

6. Owner(s) Name of Business

By signing below, Bidder certifies the owner(s) name of the business submitting bid is/are (Please print name(s) below. If not applicable, please indicate N/A.)

_____ _____

_____ _____

_____ _____

7. Delinquent Taxpayers

In accordance with law, the District shall not enter into a contract or other transaction with a person indebted to the District, nor shall the District award a contract to or enter into a transaction with an apparent low bidder or successful proposer indebted to the District.

[ ] I am not a delinquent taxpayer to McAllen ISD

[ ] I am a delinquent taxpayer to McAllen ISD *(your bid may be disqualified if your debt is not cleared prior to award.)*

8. Texas Historically Underutilized Businesses (HUB) – Texas Education Code 44.031(b)(6) or Small and Minority Firms, Women's Business Enterprises and Labor Surplus Area Firm

Contractor certifies the Bidder's company is HUB certified with the State of Texas.

[ ] I am an Active certified HUB vendor. HUB expiration date: _____

[ ] Small and Minority Firms, Women's Business Enterprises and Labor Surplus Area Firms

[ ] I am neither.

9. Buy America Provisions

By signing below, Contractor certifies that Contractor is in compliance with all applicable provisions of the Buy America Act. Purchases made in accordance with the Buy America Act must still follow the applicable procurement rules calling for free and open competition.

10. HB 89: Anti-BDS

Pursuant to Texas Government Code Chapter 2270, [Vendor] represents and warrants to the District that {Vendor] does not boycott Israel and will not boycott Israel during the term of This Agreement.

11. Federally Funded Purchases

By signing below, Contractor certifies that Contractor is in compliance with all applicable provisions for federally funded purchases (see attached "Federally Funded Purchases" form.

I, the undersigned authorized agent for the company named below, certify that the information concerning Sections 1-10 listed above has been reviewed by me and the information furnished is true to the best of my knowledge. I further certify that I agree to comply with Sections 1-11 listed above.

COMPANY NAME: _____

AUTHORIZED AGENT'S NAME (PRINTED): _____

SIGNATURE OF COMPANY OFFICIAL: _____

Contract Provisions for contracts under Federal Awards – Contractor agrees to comply with the following provisions.

- Contracts for more than the simplified acquisition threshold currently set at $150,000, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.
- All contracts in excess of $10,000 must address termination for cause and for convenience including the manner by which it will be effected and the basis for settlement.
- Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of "federally assisted construction contract" in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, "Equal Employment Opportunity" (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and implementing regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
- Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction"). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that each contractor or sub-recipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The entity must report all suspected or reported violations to the Federal awarding agency.
- Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions that are unsanitary, hazardous or dangerous. These requirements do not apply to the

purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

- Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the recipient or sub recipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or sub recipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.
- Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended—Contracts and sub grants of amounts in excess of $150,000 must contain a provision that requires the award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- Debarment and Suspension (Executive Orders 12549 and 12689)—A contract award (see 2 CFR 180.220) must not be made to parties listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.
- Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)—Contractors that apply or submit an offer for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the award.
- A an entity that is a state agency or agency of a political subdivision of a state and its contractors must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds $10,000 or the value of the quantity acquired during the preceding fiscal year exceeded $10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.
- Buy American Provision

ATTACHMENT C
W-9 – REQUEST FOR TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION

Form **W-9**
(Rev. November 2017)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

► **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ► _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ►

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person** ►	**Date** ►

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester,* later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code,* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee) b. So-called trust account that is not a legal or valid trust under state law	The grantor-trustee[1] The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships,* earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov.* You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint.* You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

ATTACHMENT D
CONFLICT OF INTEREST QUESTIONAIRE

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

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

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

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

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

OFFICE USE ONLY

Date Received

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

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

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

_____

Name of Officer

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

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

☐ Yes ☐ No

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

☐ Yes ☐ No

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

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

7

_____ _____

Signature of vendor doing business with the governmental entity Date

ATTACHMENT E
MISD CONTRACTOR'S INFORMATION STATEMENT FORM

MISD Contractor's Information Statement Form

This form is required to be submitted in order for your bid to be considered. Failure to submit this form with your bid ***will result in disqualification of bid***.

Additional sheets may be used to expand responses to the questions. Please reference the item numbers when using additional sheets.

Contractor's Name: _____

Address: _____

_____

_____

Phone: _____ **Fax Number** _____

Texas Government Code 2267.055 (a)(1) The price.

1. Proposed construction contract price (base price plus alternates). Contract price shall include both base price and total alternate price. Final weighting distribution between base Price and total of alternates will be a calculated percentage. *(60 pts.)*

   Did you submit cost on Bid Form? ☐Yes ☐No

Texas Government Code 2267.055 (a)(2) The offeror's experience and reputation.

2. List three (3) references of current or past projects completed within the past five (5) years of *similar scope and size*.

		Project Name	Architect or Engineering Firm	Scope	Cost	Completion Date	On-time Completion Y/N
(1pt.)	*I.*						
(1pt.)	*II.*						
(1pt.)	*III.*						

3. List any claims, judgments, arbitration proceedings or suits pending or outstanding against your company or its officers. If any, summarize the nature of such claims below: *(1pt.)*

Date	Owner	Summary

4. List current or past **MISD projects** completed within the past five (5) years of *similar scope and size* **where you have been the "Prime Contractor".**

		Project Name	Architect or Engineering Firm	Scope	Cost	Completion Date	On-time Completion Y/N
(1pt.)	*I.*						
	II.						
	III.						
	IV.						
	V.						

5. List three (3) current or past **K-12 projects** completed within the past five (5) years of similar scope and size **where you have been the "Prime Contractor".**

		Project Name	Owner Name/ Phone No.	Architect or Engineering Firm	Scope	Cost	Completion Date	On-time Completion Y/N
(1pt.)	*I.*							
(1pt.)	*II.*							
(1pt.)	*III.*							
	IV.							
	V.							

6. List current or past **Non K-12 projects** completed within the past five (5) years of similar scope and size **where you have been the "Prime Contractor".**

		Project Name	Owner Name/ Phone No.	Architect or Engineering Firm	Scope	Cost	Completion Date	On-time Completion Y/N
(1pt.)	*I.*							
(1pt.)	*II.*							
(1pt.)	*III.*							
	IV.							
	V.							

7. List three (3) references and attach Supplier Reference Letters from **major suppliers and/or sub-contractors** within the past two (2) years which specifically address:
   - History of paying sub-contractors
   - Providing materials on time

		Reference	Reference Letter Attached
(1pt.)	I.		☐Yes ☐No
(1pt.)	II.		☐Yes ☐No
(1pt.)	III.		☐Yes ☐No

Texas Government Code (a)(3) The quality of the offeror's goods or services.

8. List your company's history of on-time project completion *(based on responses stated in questions 4-6).*

		Project Name	Owner Name/ Phone No.	Architect or Engineering Firm	Scope	Cost	Completion Date	On-time Completion Y/N
(1pt.)	I.							
(1pt.)	II.							
(1pt.)	III.							

9. List your company's history of repeat business with project owner(s) for similar scope and size.

		Owner	# of Repeat Projects
(1pt.)	I.		
	II.		
	III.		
	IV.		

V.		

Texas Government Code (a)(5) The offeror's safety record.

10. Attach **"Workers Compensation Experience Rating"** for the **last three (3) years** and the correspondnding letter from your insurance agent. *(3 pts.)*

11. Attach **"OSHA Form 300 Log of Work-Related Injuries and Illnesses"** for the **last three (3) years** addressing the following: *(3 pts.)*
    - Number of injuries and illnesses
    - Number of lost time accidents
    - Number of recordable cases
    - Number of fatalities
    - Number of employee direct hire fixed hours worked (round to 1,000's)

12. Attach your company's safety program manual and/or procedures for current and new employees. *(2pts.)*

13. State the fequency safety inspections are conducted for projects on the following line: _____ *(1pt.)*

14. Attach your company's drug/alcohol prevention policy and/or procedures. *(1pt.)*

Texas Government Code 2267.055 (a)(6) the offeror's proposed personnel

Select the correct statement: *(1 pt.)*

15. ☐ **General Contractor**: My company will utilize 100% of its own forces.
    Describe the sufficient resources your company has to manage staff and successfully perform the work.

    _____

    _____

    _____

    ☐ **Joint venture or other type of arrangement**:
    Describe type of arrangement. If using subcontractors, list the subcontractors by trade that will be assigned to this project.

    _____

    _____

    _____

16. List names of the individuals who will be assigned for the duration of the project (i.e., Project Manager, Assistant Project Manager, Project Superintendent, Assistant Project Superintendent and MEP Quality Control Specialist). Include their job titles, job descriptions/responsibilities, and attach resumes to include details listed in section 11.16 of the CSP. *(2 pts.)*

Name	Job Title	Job Description/Responsibilities	Resume Attached
			☐Yes ☐No
			☐Yes ☐No
			☐Yes ☐No
			☐Yes ☐No
			☐Yes ☐No

Texas Government Code (a)(7) Whether the offeror's financial capability is appropriate to the size and scope of the project

17. Attach a letter from your surety company addressing the following points: *(2 pts.)*

1) Surety Company

- Listed in the State Board of Insurance, Bond Department's "List of Insurance Companies Licensed to Write Fidelity and Surety Bonds in Texas.
- Is authorized to do business in Texas and is authorized to do business up to the limit of the contract.
- Holds a certificate of authority from the U.S. Secretary of Treasury or has obtained reinsurance for any liability in excess of $100,000.
- AM Best Rating

2) Contractor

- Maximum bonding limit for the contractor.
- Aggregate/total available limit of coverage.
- Single limit coverage.
- Years doing business with surety.

18. List projects that your company *currently* has in progress. *(1 pt.)*

Project Name	Owner Contact Person/Phone No.	Architect or Engineering Firm	Contract Amount	Percent Completed	Scheduled Completion Date

State your company's total worth of work in progress and under contract: $_____

19. Attach a **NOTARIZED** and **CURRENT** financial statement. *(2 pts.)*

For all business entities other than publicly held corporations, please attach a financial statement ***preferably*** **audited** showing organization's latest:

- Balance and income statement (indicating current assets, net fixed assets, other assets, current liabilities and other liabilities)
- Financial statement (indicating date, name and address of firm preparing financial statement)

NOTE: If the financial statement is not for the identical organization submitting offer, state below the relationship and financial responsibility of the organization whose financial statement is provided (parent, subsidiary, etc.):

_____

_____

_____

20. Select your company's Dun & Bradstreet risk indicator and attach documentation *(risk indicator 1 – 4):* *(1 pt.)*

Risk Indicator			
1☐	2☐	3☐	4☐

21. Submit Bond in a form as indicated in section 7.0 of CSP. *(1 pt.)*

Texas Government Code (a)(8) Any other relevant factor specifically listed in the request for bids or proposals.

22. Attach a proposed project schedule/timeline. *(2 pts.)*

The undersigned affirms that the information provided herein is true and sufficiently complete so as not to be misleading and has the authority to bind the represented company to a contract.

Company Name	Title of Official	Printed Name of Official	
Phone Number	E-Mail Address	Signature of Official	Date

PROPOSAL FORM

PROJECT: Competitive Sealed Proposal No. 2018-094- McAllen ISD Fine Arts Theater Equipment Improvements for Memorial, McAllen, and James "Nikki" Rowe High School Phase II
PLACE: 4309 Warrior Drive, Bldg C, McAllen, Texas
OPEN/DEADLINE DATE: August 31, 2018
SUBMISSION TIME: 3:00 PM(Central Time)

Pursuant to and in compliance with the Request for Competitive Sealed Proposal and the proposed Contract Documents, prepared by **McAllen ISD** relating to the above referenced project, the undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with local conditions affecting the performance and costs of the work at the place where the work is to be completed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the time stated and in strict accordance with the proposed Contract Documents, and addenda, thereto, including furnishing of any and all labor and materials for all General Construciton and Site Work, for the following sum of money:

CONFIRMATION OF ADDENDUMS:_____#1 _____#2 _____#3 _____#4 _____None Received

BID

All labor, materials, services and equipment necessary for completion of the work shown on the drawings and in the specifications. All divisions included, minus alternates.

Memorial High School

Project Cost Dollars (Base Bid)	$	_____
Project Contingency	$	**10,000.00**
Total Cost Dollars	$	_____

Itemized Cost (cost to be included in Base Bid):

1. Dimmer Rack	$	_____
2. Lighting Package	$	_____

McAllen High School

Project Cost Dollars (Base Bid)	$	
Project Contingency	$	**10,000.00**
Total Cost Dollars	$	

Itemized Cost (cost to be included in Base Bid):

1. Dimmer Rack	$	
2. Lighting Package	$	

"Nikki" Rowe High School

Project Cost Dollars (Base Bid)	$	
Project Contingency	$	**10,000.00**
Total Cost Dollars	$	

Itemized Cost (cost to be included in Base Bid):

1. Dimmer Rack	$	
2. Lighting Package	$	

UNIT PRICES: All unit prices are all inclusive and include insurance, profit, markup and overhead. They may be used by the district to increase or decrease the contract in any negotiations prior to award. The district reserves the right to make any increase, up to 25%, over bid amount based on your submitted unit prices through Substantial Completion.

1. If awarded this Contract, the undersigned will execute a satisfactory Construction Contract, Performance Bond, Labor and Material Payment Bond and proof of insurance coverage, with the Owner for the entire work as per the Contract Documents within ten (10) days after notice of award. It is agreed that this bid is subjected to the Owner's acceptance for a period of forty-five (45) days from the date of opening.

2. The district has a critical need for substantial completion by **March 30, 2019.** If the project begins on **October 01, 2018,** construction is to be completed by **March 30, 2019 (**180 calendar days).

   *S**pecify the calendar days that you can substantially complete the project: _____calendar days**.

3. Enclosed is a Bid Bond in the amount of $_____ (not less than **five percent of the total greatest amount, bid including any applicable alternates, contingency).**

The undersigned affirms that the information provided herein is true and sufficiently complete so as not to be misleading and has the authority to bind the represented company to a contract.

Company Name	Title of Official	Printed Name of Official	
Phone Number	E-Mail Address	Signature of Official	Date

ALEJANDRA GONZALEZ
Director of Purchasing Services

Supplier Reference Letter

McAllen ISD is accepting proposals for **Competitive Sealed Proposal No. 2018-094 – McAllen ISD Fine Arts Theater Equipment Improvements for Memorial, McAllen, and James "Nikki" Rowe High School Phase II**. By completing this reference form you attest to my company's performance for project(s) completed within the past two (2) years.

On behalf of:

Company Name	**Company Representative**
Phone Number	**Representative's E-Mail Address**

1. The company's history of paying sub-contractors.

☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor

Comments: _____

_____

1. The company's history of providing materials on time.

☐ Excellent ☐ Good ☐ Satisfactory ☐ Poor

Comments: _____

_____

Reference prepared by:

Printed Name	Signature
Title	E-Mail Address
Phone Number	Date Completed

ATTACHMENT F
AIA A101 – 2007 Standard Form of Agreement between Owner and Contractor
AIA A201 – 2007 General Conditions of the Contract for Construction

DRAFT

AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)
McAllen Independent School District
2000 N. 23rd Street
McAllen, TX 78501

THE ARCHITECT:
(Name, legal status and address)
« » « »
« »

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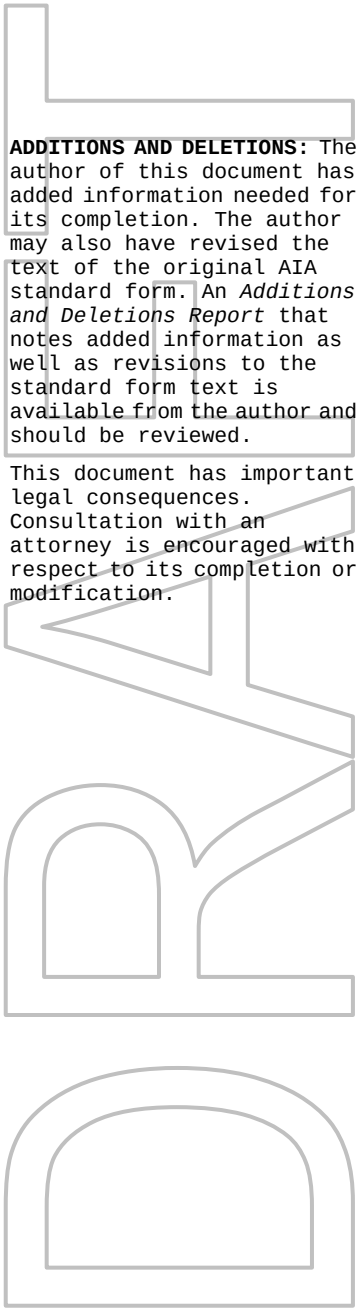
15 CLAIMS AND DISPUTES

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.



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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect pursuant to Section 7.4. At the Owner's option, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.1.1 Contractor acknowledges and warrants that it has closely examined all the Contract Documents and is unaware of any instance where the documents are not suitable or are insufficient to enable the Contractor to complete the Work in a timely manner for the Contract sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred or useful for the completion of the Work in full compliance with all applicable codes, laws, ordinances, and regulations.

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor (except as provided in Sections 5.3 and 5.4 hereof), (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations of the Contractor under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

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

§ 1.1.3.1 The Work shall include the obligation of the Contractor to visit the site of the Project before submitting a proposal. Such site visit shall be for the purpose of familiarizing Contractor with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, including all existing site conditions, access to the site, physical characteristics of the site and surrounding areas. It also includes all supplies, skill, supervision, transportation services and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract and all other items of cost or value needed to produce, construct and fully complete the public work identified by the Contract Documents.

§ 1.1.4 THE PROJECT

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

§ 1.1.5 THE DRAWINGS

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

§ 1.1.6 THE SPECIFICATIONS

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

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

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

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS
§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to Owner and Architect by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all bidders.

If such differences or conflicts were not called to Owner's and Architect's attention prior to submission of bids, Architect shall decide which of the conflicting requirements will govern based upon the following: the most stringent of the requirements will take precedence over the less stringent; the most expensive item will take precedence over the less expensive, and subject to the approval of Owner, Contractor shall perform the Work at no additional cost and/or time to Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable as being necessary to produce the intended results.

§ 1.2.1.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

.1 The Agreement;
.2 Addenda, with those of later date having precedence over those of earlier date;
.3 Supplemental Conditions, if any;
.4 The General Conditions of the Contract for Construction;
.5 Specifications
.6 Drawings, in the case of inconsistency between the Drawings and Specifications or within either document, not clarified by Addendum, the better quality or greater quantity of Work shall be included in the Contract Documents. Clarifications of the inconsistency will be accomplished with the Contractor and, if necessary, an appropriate reduction in the contract will be accomplished by Change Order. Figures given on drawings govern scale measurements. Large scale drawings take precedence over small sale drawings. Written words take precedence over numbers. Handwritten documents take precedence over typewritten documents. Existing conditions take precedence over drawings and specifications for dimensions and shall be verified by the Contractor. The Contractor proceeds at his own risk if conflicts or discrepancies are not resolved prior to the execution of the Work.

§ 1.2.1.2 If Work is required in a manner to make it impossible to produce Work of the quality required by or reasonably inferred from the Contract Documents, or should discrepancies appear among the Contract Documents, Contractor shall request in writing an interpretation from Architect before proceeding with the Work. If Contractor fails to make such request, no excuse will thereafter be entertained for failure to carryout Work in the required manner or provide required guarantees, warranties, or bonds, and Contractor shall not be entitled to any change in the Contract Sum or the Contract Time on account of such failure.

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

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

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

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

§ 1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE
§ 1.5.1 Instruments of Service, including the Drawings, Specifications, and other similar or related documents and copies thereof are furnished to Contractor for the purpose of performing the Work and are, and shall remain, the property of Owner and Owner will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Owner's or Owner's consultants' reserved rights.

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

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

ARTICLE 2 OWNER
§ 2.1 GENERAL
§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Board of Trustees of Owner, by majority vote, is the only representative of Owner, having the power to enter into a Contract, to execute a change order requiring an increase in the Contract Sum, or agree to an extension of the contractual completion date. The Board shall designate, as appropriate, an authorized representative(s) to act on its behalf during the course of construction. In the event that an emergency changes the scope of the Work before the Board's next regular meeting or in order to facilitate and expedite the timely completion of the Work, the Board's authorized representative(s) may approve construction changes that do not exceed $5,000.00 in increased costs. Any such changes shall be confirmed in writing between the Contractor and the Board's authorized representative(s) and notice of such approved changes shall be given to the Board at its next regular meeting. The Board will act as soon as reasonably possible to avoid undue delays in the construction completion date.

§ 2.1.2 DELETED.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER
§ 2.2.1 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

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

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics and legal limitations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work. In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utilities lines, telephone company, cable, sewer lines, water pipes, gas lines, and electrical lines, including without limitation, all buried pipelines and buried telephone cables and shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes and pipelines. Under this provision the Architect and Engineer are in no way relieved of their responsibilities outlined in the Contract or other attached contracts for identification of existing conditions.

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

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2 for use on this Project. All costs of reproduction are the responsibility of Contractor.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents or fails to remove and discharge (within ten (10) days) any lien filed upon Owner's or, if applicable landlord's, property by anyone claiming by, through, or under Contractor, or disregards the instructions of Architect or Owner when based on the requirements of the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3 and any delay resulting from such Work stoppage shall not extend any Milestone Date identified in the Contract for Construction or the required dates of Substantial or Final Completion.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

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

§ 2.4.1 The rights stated in Article 2 shall be in addition to and not in limitation of any other rights of Owner granted in the Contract Documents or at law or in equity.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express

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authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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

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

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

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

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

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

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

§ 3.2.5 The Contractor shall not be entitled to additional compensation for the "rework portion" of any additional work caused by his failure to carefully study and compare the Contract Documents prior to execution of the Work.

§ 3.2.6 The Contractor shall make reasonable attempt to interpret the Contract Documents before asking the Architect for assistance in interpretation. The Contractor shall not ask the Architect for observation of work prior to the Contractor's field superintendent's personal inspection of the work and his determination that the work complies with the Contract Documents.

§ 3.2.7 If, in the opinion of the Architect, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or Architect's consultants to expend an unreasonable amount of the time in the discharge of the duties imposed on Architect by the Contract Documents, then the Contractor shall bear the cost of compensation for the Architect's additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to Sections 3.2.6, 3.2.7, and 3.12 before additional services are performed.

§ 3.2.8 If the Contractor has knowledge that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor his Warranty, Contractor shall promptly

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notify the Architect in writing, providing substantiation for the position. Any necessary changes, including substitutions of materials, may only be accomplished by an appropriate Modification.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

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

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

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

§ 3.3.4 Contractor shall be responsible to Owner for acts and omissions of Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work under Contract Documents or other arrangements with Contractor.

§ 3.3.5 Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on the Work, including those with respect to the safety of persons and property and their protection from damages, injury, or loss. Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by Contractor, its Subcontractor, or anyone directly or indirectly employed by any of them or by anyone for whose acts they may be liable, except for damage or loss attributable solely to acts or omissions of Owner or Architect or by anyone for whose acts either of them may be liable and not attributable to the fault or negligence of Contractor, its Subcontractor, or anyone directly or indirectly employed by them. The foregoing obligations of Contractor are in addition to Contractor's obligations under other provisions hereunder.

§ 3.3.6 Contractor shall be responsible for inspection of portion of Work already performed under the Contract for Construction to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.7 Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions, and that they provide materials on time. Contractor shall coordinate its Work with that of all others on the Project, including of construction utilities.

§ 3.3.8 Contractor shall establish and maintain bench marks and all other grades, lines, and levels necessary for the Work; report errors or inconsistencies to Owner and Architect before commencing Work; and, if applicable, review the placement of the buildings and permanent facilities on the site with Owner and Architect after all lines are staked out and before foundation Work is started. Contractor shall provide access to the Work for Owner, Architect, other persons designated by Owner, and governmental inspectors. Any encroachments made by Contractor or its Subcontractors on adjacent properties caused by construction as revealed by an improvements survey, except for encroachments arising from errors or omissions not reasonably discoverable by Contractor in the Contract Documents, shall be the sole responsibility of Contractor, and Contractor shall correct such encroachments within thirty (30) days of the improvement survey (or as soon thereafter as reasonably possible), at Contractor's sole cost and expense, either by the removal of the encroachment (and subsequent reconstruction on the Project site) or agreement with the adjacent property owner (s) (in form and substance satisfactory to Owner in its sole discretion) allowing the encroachments to remain.

§ 3.3.9 Contractor shall verify at the Work site the measurements indicated on the Drawings and Specifications and shall establish correctly the lines, levels, and positions for the Work and be responsible for their accuracy and proper

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correlation with control lines, monuments, and data, as established by surveys furnished by Owner. Work shall be erected square, plumb, level, true to line and grade, in the exact plane and to the correct elevation and/or sloped to drain as indicated. To ensure the proper execution of its subsequent Work, Contractor shall measure all Work already in place (including but not limited to utilities and grades installed or prepared by others) and shall at once report to Architect and Owner any discrepancy between said Work and the Drawings and Specifications for the Work.

§ 3.3.10 Any discrepancy or omission in the dimensions or elections shown on the Drawings and Specifications or found in previous Work which may prevent accurate layout or construction of the Work, shall immediately be reported by Contractor to Owner and Architect. If Contractor performs, permits, or causes performance of any Work when Contractor knows or reasonably should have known that such discrepancy or omission exists, without first obtaining further instruction from Architect or Owner, Contractor shall bear any and all costs arising therefrom including, without limitation, the costs of correction thereof without increase or adjustment in the Contract Sum. Omissions from the Drawings or Specifications, or the misdescription of details of Work which are reasonably inferable in order to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve contractor from performing such omitted or mis-described details of the Work, and they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications, at no additional cost to Owner.

§ 3.3.11 Contractor shall engage workers who are skilled in performing the Work, and all Work shall be performed with care and skill and in a good workmanlike manner under the full-time supervision of an approved engineer or foreman. Contractor shall be liable for all property damage, including repairs and replacements of the Work and economic losses, which proximately result from the breach of this duty. Contractor shall advise Architect:

.1 if a specified product deviates from good construction practices;
.2 if following the Specifications will affect any warranties; or
.3 any objections which Contractor may have with the Specifications.

Nothing contained in Section 1.1.3 shall alter the responsibilities established in this Section.

§ 3.4 LABOR AND MATERIALS

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

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

.1 represents that Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
.2 represents that Contractor will provide the same warranty for the substitution that Contractor would for that specified;
.3 certifies that the cost data presented is complete and includes all related costs under this Contract except Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
.4 will coordinate the installation for the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. Contractor shall also be responsible for labor peace on the Project and shall at all times make its best efforts and judgments as an experienced Contractor to adopt and implement policies and practices designed to avoid Work stoppages, slowdowns, disputes, or strikes where reasonably possible and practical under the circumstances and shall at all times maintain Project-wide labor harmony. Except as specifically provided in Section 8.3 hereof, Contractor shall be liable to Owner for all damages suffered by Owner.

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§ 3.4.4 Materials shall conform to manufacturer's standards in effect at the date of execution of the Agreement and shall be installed in strict accordance with manufacturer's directions. Contractor shall, if required by Owner or Architect, furnish satisfactory evidence as to the kind and quality of any materials. All packaged materials shall be shipped to the site in the original containers clearly labeled, and delivery slips shall be submitted with bulk materials identifying thereon the source, and warranting quality and compliance with Contract Documents.

§ 3.4.5 When the Contract Documents require the Work, or any part of same, to be above the standards required by applicable laws, ordinances, rules and regulations, and other statutory provisions pertaining to the Work, such Work shall be performed and completed by Contractor in accordance with the Contract Documents.

§ 3.4.6 When the manufacturer's name, patent numbers, underwriter's labels, model numbers or similar identifying marks are required, such markings shall be located as inconspicuously as possible.

§ 3.5 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of the best quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from faults and defects. Work, materials, or equipment not conforming to these requirements may be considered defective. If required by the Architect or Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 ALL WARRANTIES SHALL INCLUDE LABOR AND MATERIALS AND THE MANUFACTURER'S WARRANTY SHALL BE SIGNED BY SUBCONTRACTOR AND COUNTERSIGNED BY CONTRACTOR. ALL WARRANTIES SHALL BE ADDRESSED TO OWNER AND DELIVERED TO ARCHITECT UPON COMPLETION OF THE WORK AND BEFORE OR WITH THE SUBMISSION OF REQUEST FOR FINAL PAYMENT.

§ 3.5.3 Contractor shall issue in writing to Owner as a condition precedent to final payment a "general warranty" reflecting the terms and conditions of this Section 3.5 for all Work under the Contract.

§ 3.5.4 The warranties provided in Section 3.5 shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents, and such warranty or remedy required by law or by the Contract Documents, and such warranty shall be interpreted to require Contractor to replace defective materials and equipment and re-execute defective Work which is disclosed to the Contractor by the Owner within a period of one (1) year after final completion of the entire Work unless a longer time is specifically called for in the specifications. The Contractor shall assign all components, equipment and fixture warranties to the Owner and will deliver all manuals to the Owner at the completion of construction.

§3.5.5 Except when a longer warranty time is specifically called for in the Specification Sections or is otherwise provided by law, the General Warranty shall be for twelve (12) months and shall be in form and content otherwise satisfactory to Owner.

§3.5.6 Warranties shall become effective on a date established by Owner and Architect in accordance with the Contract Documents. This date shall be the Date of Substantial Completion of the entire Work, unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties.

§3.5.7 If Architect considers it impractical, because of unsuitable test conditions or some other factors, to execute simultaneous final acceptance of all equipment, portions of properly installed and functioning equipment may be certified by Architect for final acceptance, subject to Owner's approval, when that portion of the system is complete and ready for operation as called for under Section 9.8.1.

§3.5.8 Contractor shall warrant for a period of twelve (12) months that the building(s) 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 Contractor's control. Contractor shall, immediately upon notification by Owner of water penetration, determine the source of water penetration and, at its own expense, do any Work necessary to make the building(s)

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watertight. Contractor shall also, at its own expense, repair or replace any other damaged material, finishes, and furnishings, damaged as a result of this water penetration, to return the building(s) to its (their) original condition.

§3.5.9 In addition to the foregoing stipulations, Contractor shall comply with all other warranties referred to in any portions of the Contract Documents or otherwise provided by law or in equity, and where warranties overlap, the more stringent requirement shall govern.

§3.5.10 If for any reason Contractor cannot warrant any part of the Work using material or construction methods that have been specified, or shown, it shall notify Owner and Architect in writing before the Contract is signed, giving reasons, together with the name of product and data on a substitution it can warrant.

§ 3.6 TAXES

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

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall make application, secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract, including without limitation, street openings, sidewalk, and other obstructions, access over public ways and storage necessary for proper execution and which are, legally required at the time bids are received or negotiations concluded.

§3.7.1.1 The Contractor shall also obtain all permits and approvals, and pay all fees and expenses, if any, associated with National Pollutant Discharge Elimination System (NPDES) regulations administered by the Environmental Protection Agency and state and local authorities, that require completion of documentation and/or acquisition of all permits for the Project. Contractor's obligations under this Section do not require it to perform engineering services during the pre-construction phase to prepare proper drainage for the construction sites. However, any drainage alterations made by Contractor during construction phase which modifies the original site drainage plan and requires the issuance of a permit shall be at Contractor's sole cost.

a. The Owner shall pay directly to the governing authority the cost of all permanent property utility assessments and similar utility connection charges.

b. The Contractor shall be responsible for obtaining and paying for all City and County Building Permits, Inspection Fees and Plan Checking Fees; temporary utility charges, tap charges and water meter charges and any other similar fees assessed by jurisdictional authorities having control over the Project.

c. The Owner shall pay fees payable to the Texas Department of Licensing and Regulations (TDLR) for document review relative to the Elimination of Architectural Barriers Act and the Architect will submit the documents to the TDLR for review and approval.

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

§ 3.7.3 If the Contractor performs Work (including, without limitation, the installation of any materials or equipment) that it knows or reasonably should have known would be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 **Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the

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Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend to the Owner in writing an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15. . No adjustment in the Contract Time or Contract Sum shall be permitted in connection with a concealed or unknown condition that does not differ materially from those conditions disclosed or based on data provided to Contractor and by the Contractor's prior inspections, tests, reviews, and pre-construction services for the Project; or by the Contractors inspections, tests, reviews and pre-construction services that Contractor had the opportunity and obligation to make in connection with the Project but did not do so.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect in writing. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 ALLOWANCES

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

.1 Allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and

.3 Whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness. If a decision is needed to avoid a delay, Contractor shall notify Architect and Owner in writing sufficiently in advance of needed date to allow reasonable time for selections to be made.

§ 3.9 SUPERINTENDENT

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The superintendent shall be satisfactory to the Owner and shall not be changed except with the consent of the Architect, unless the superintendent leaves the employment of the Contractor. No increase in Contract Time or Contract Sum shall be allowed in the event the Owner or Architects object to any nominated superintendent. Such approval by the Owner shall not be unreasonably withheld.

§ 3.9.3 DELETED.

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§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's I review and approval a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised as required herein and at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The schedule shall indicate the proposed starting and completion dates for the various subdivisions of the Work as well as the totality of the Work. The schedule shall be updated every thirty (30) days and submitted to Architect with Contractor's Applications for Payment. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time stated in the original schedule. If any schedule submitted sets such a date for Substantial Completion for the Work or any phase of the Work beyond the date(s) of Substantial Completion established in the Contract (as the same may be extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a narrative description of the means and methods that Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum or the schedule.

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

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

§ 3.10.4 The process of approving Contractor's schedules and updates to Contractor's schedule shall not constitute a warranty by the Owner that any non-Contractor milestones or activities will occur as set out on Contractor's schedule. Approval of a Contractor's schedule does not constitute a commitment by the Owner to furnish any Owner-furnished information or material any earlier than Owner would otherwise be obligated to furnish that information or material under the Contract Documents. Failure of the Work to proceed in the sequence scheduled by Contractor shall not alone serve as the basis for a Claim for additional compensation or time. In the event there is interference with the Work, which is beyond its control, Contractor shall attempt to reschedule the Work in a manner that will hold resulting additional time and cost to a minimum. The construction schedule shall be in a detailed format satisfactory to the Owner and the Architect and shall also:

.1 provide a graphic representation of all activities and events that will occur during performance of the Work;
.2 identify each phase of construction and occupancy; and
.3 set forth dates that are critical in ensuing the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents hereinafter referred to as Milestone Dates.

§ 3.10.5 The Owner shall have the right to reschedule the time of day for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any tenants or invitees thereof. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any rescheduling of performance of the Work under this Section 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Section 8.3.1 and an equitable adjustments in the Contract Sum, if: (1) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents, (2) such rescheduling is required for the convenience of the Owner and is not attributable to any act of omission of Contractor, and (3) if Owner agrees to the Contract Sum adjustment prior to any rescheduling.

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§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections (all changes and selections to be approved by Owner and Architect in advance) made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.1 At the Date of Substantial Completion and as a condition precedent to final payment, Contractor shall furnish the following documents to Architect for submittal to Owner: Record Drawings showing the field changes and selections (all changes and selections to be approved by Owner and Architect in advance) affecting the general construction, mechanical, electrical, plumbing, and all other Work, and indicating the Work as actually installed. These shall consist of carefully drawn markings on a set of reproducible prints of Architect's Drawings obtained and paid for by Contractor. Contractor shall maintain at the job site one (1) set of Architect's Drawings and indicate thereon each field change as it occurs. The Contractor shall post all Addenda on Construction Documents prior to commencing work on the site.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. If, in the opinion of the Architect, the Shop Drawings, Product Data, Samples and similar submittals are incomplete, indicate an inadequate understanding of the work covered by the submittals, or indicate a lack of study and review by the Contractor prior to submittal to the Architect, the submittals will be returned, unchecked, to the Contractor for correction of these three deficiencies and subsequent re-submittal. Additional service charges as outlined in Section 3.2.7 may be charged by the Architect in this event.

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

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

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop

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

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

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional who shall comply with requirements of Owner regarding qualifications and insurance, and whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.12.11 The Contractor shall submit Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents to the Architect at least 30 days prior to the date the Contractor needs the reviewed submittals returned. Where colors are to be selected by the Architect, the Contractor shall submit all Samples in adequate time to allow the Architect to prepare a complete selection schedule. In general, all submittals requiring color selection shall be submitted to the Architect within four weeks of the date of the Contract for construction.

§3.12.12 The Contractor shall submit the number of copies of Shop Drawings, Product Data, Samples and similar submittals which the Contractor and his Subcontractors need for their use plus two additional sets for the Architect and one additional set for each of the Architect's consultants involved with the particular section of work. Where shop drawings are involved, the Contractor shall submit one high quality reproducible transparency and one opaque print of the shop drawing for the Architect plus one additional opaque print for each of the Architect's consultants involved with the particular section of work. The reproducible transparency will be marked by the Architect and/or his consultants and returned to the Contractor for his use, distribution, correction or re-submittal as required. The Architect and his consultants will retain the marked up prints. After final review and correction of the submittal, the Contractor shall send two corrected sets to the Architect, and one to each of the Architect's consultants involved with the particular section of work.

§ 3.13 USE OF SITE

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

§3.13.1 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

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§3.13.2 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without written consent of the Owner.

§3.13.3 Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work 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 of the Work shall be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision on the Contract Documents, Contractor 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 or the Work or (2) the Building in the event of partial occupancy.

§3.13.4 Without prior approval of the Owner, the Contractor 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 Owner. Without limitation of any other provisions of the Contract Documents, the Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time.

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.15.3 Prior to the Architect's inspection for Submittal Completion the Contractor shall clean exterior and interior surfaces exposed to view; remove temporary labels, stains, and foreign substances; polish transparent and glossy surfaces; clean equipment and fixtures to a sanitary condition; replace air filters in mechanical equipment; clean roof, 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.

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

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§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold harmless Owner, the Board of Trustees of Owner, all elected officials, employees and agents of Owner and of any of the above mentioned parties (the "Indemnified Parties") from and against any and all loss, cost, expense, damage, injury, liability, claim, demand, penalty, or cause of action (including attorneys' fees), directly or indirectly arising out of, resulting from, or related to (in whole or in part), (1) the Work performed hereunder, (2) the Contract, or (3) the act or omission of Contractor, a Subcontractor, or an individual, partnership, joint venture, corporation or other entity (a) directly or indirectly employed by Contractor or a Subcontractor, or (b) for whose acts or omissions Contractor or a Subcontractor may be liable (excluding property damage to the Work itself, covered by Owner's all-risk builder's risk insurance, subject to Contractor's liability for any deductible amounts thereunder). The obligations of Contractor under this indemnification shall apply to all matters except those arising solely from the wanton and willful negligence or the malicious acts or omissions of Owner. Further, the obligations of Contractor under this indemnification shall not extend to the liability of Architect, its agents, or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs, or Specifications, (2) the giving of or failure to give directions or instructions by Architect, its agents, or employees, provided such giving or failure to give is the primary cause of the injury or damage, or (3) any matter prohibited by Section 130.002, Texas Civil Practice and Remedies Code. Contractor shall promptly advise Owner in writing of any action, administrative or legal proceeding, or investigation as to which this indemnification may apply, and Contractor, at Contractor's expense, shall assume on behalf of Owner and conduct with due diligence and in good faith the defense thereof with counsel satisfactory to Owner; provided, Owner shall have the right to be represented therein by advisory counsel of its own selection and at its own expense; and provided further, that if the defendants in any such action include both Contractor and Owner, and Owner shall have reasonably concluded that there may be legal defenses available to it that are different from, or additional to, or inconsistent with, those available to Contractor, then Owner shall have the right to select separate counsel to participate in the defense of such action on its own behalf at Contractor's expense. In the event of failure by Contractor to fully perform in accordance with this indemnification Section, then Owner, at its option, and without relieving Contractor of its obligations hereunder, may so perform, but all costs and expenses so incurred by Owner in that event shall be reimbursed by Contractor to Owner, together with interest on the same from the date any such expense was paid by Owner until reimbursed by Contractor, at the rate of interest provided to be paid on judgments by the law of the jurisdiction to which the interpretation of the Contract is subject. The obligations of Contractor under this Section shall survive the expiration of the Contract and specifically shall survive the limitations contained in Section 15.1 hereof.

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

§ 3.19 SUBSTITUTIONS OF PRODUCTS AND SYSTEMS, "OR EQUAL" BRANDS

§ 3.19.1 The materials, products and the systems covered by these specifications have been selected as a standard because of quality, particular suitability, or record of satisfactory performance. It is not intended to preclude the use of equivalent or better materials, products or systems provided that it meet the requirements of the particular project and have been approved in an addendum as a substitution prior to the submission of bids. If prior written approval in an addendum has not been obtained, it will be assumed that the Bid is based upon the materials, products, and systems described in the Bidding Documents and no substitutions will be permitted, except as provided hereinafter.

§3.19.2 If, after award of contract, the Contractor or one of his Subcontractors or Suppliers determines that any of the products or systems specified will perform in a manner that will limit the Contractor's ability to satisfactorily perform the work or to honor the Warranty, the Contractor shall promptly notify the Architect, in writing, providing detailed substantiation for his position. Any changes deemed necessary by the Owner and Architect, including substitution of materials and change in Contract Sum, either upward or downward, if any, shall be accompanied by appropriate modification.

§3.20 RECORD DRAWINGS

§3.20.1 At the completion of the project, the Contractor shall submit one complete set of blue lines showing all changes and routing of utilities made during construction, excluding Architect made CAD changes, to the Architect. Drafting

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shall be legible to the Architect's satisfaction. The Contractor shall pay for the cost of the required recording/drafting. The record set shall be kept up to date on a daily basis and the Architect shall review its status at the project meetings. The Architect shall furnish the Contractor with a blueline set at contract award which shall have all Addenda incorporated. The Owner will pay for the printing of the blueline set. The Architect will incorporate any record information into the construction (CAD) documents and provide the Owner with an electronic copy of the record information on the Construction documents that have all bid and construction changes incorporated. The cost for incorporating the record information into the CD will be paid for by the Owner. The Architect will transmit the electronic CD to the Owner with a copy of the transmittal to the Contractor's construction manager.

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

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

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

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect whose status under the Contract Documents shall be that of the former Architect.

§ 4.2 ADMINISTRATION OF THE CONTRACT

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect shall not have control over or charge of and shall not be responsible for safety precautions and programs in connection with the Work. Architect shall be responsible for promptly notifying Contractor of the failure of Contractor, Subcontractors or any other persons performing any of the Work, in failing to use proper construction means, methods, techniques, sequences, procedures, safety precautions and programs, but only to the extent Architect becomes aware of, or should, exercising due professional diligence, be aware of, same. Architect shall also promptly notify Owner in writing of the failure of any of the foregoing parties to carry out the Work in accordance with the Contract Documents.

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

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

§ 4.2.6 The Architect has authority and responsibility to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

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

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

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

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

§ 4.2.13 DELETED.

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

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, but no later than 10 days prior to the submittal date for the Contractor's first Application for Payment shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection. Failure of the Contractor to submit the subject names in a timely manner may delay processing of the Contractor's Application for Payment.

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

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection.

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

§ 5.3 SUBCONTRACTUAL RELATIONS

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

§ 5.3.1 All subcontracts shall be in written form and shall specifically provide that Owner is an intended third-party beneficiary of the subcontract.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

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

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

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

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity.

§ 5.5 Contractor shall promptly notify Owner and Architect of any material defaults by any Sub-contractor. Notwithstanding any provision contained in Article 5 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 Sub-contractor or other materialman or workman employed by Contractor the right to obtain a personal judgment or to create a lien against Owner for the amount due from the Contractor.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

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

§ 6.2 MUTUAL RESPONSIBILITY

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

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

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§ 6.2.3 DELETED.

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work. Except as permitted in Section 7.3 and 9.7, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 7.2 CHANGE ORDERS

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

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

§ 7.2.2 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited, to all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

§7.2.3 Contractor shall keep and periodically submit to Owner copies of a log for all Change Orders.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation in writing between the Owner and the Contractor;

.2 Unit prices stated in the Contract Documents or subsequently agreed upon in writing between the Owner and the Contractor;

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee, in each case in writing between the Owner and the Contractor; or

.4 As provided in Section 7.3.7.

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit not to exceed a total maximum of **fifteen** percent **(15%)** for all Work, and further limited to as follows, not to exceed five percent (5%) for Work done by Contractor's employees and **ten** percent **(10%)** of such Work's actual cost to be apportioned between any and all Subcontractors and Sub-subcontractor. "*Actual cost*" does not include any item that could be deemed to be a general conditions cost or overhead, such as, but not limited to, the cost of Contractor and Subcontractor supervisory personnel assigned to the Work, and field office and related expenses. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

.1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

.2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

.5 Additional costs of supervision and field office personnel directly attributable to the change.

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

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be

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reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

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

§ 7.4 MINOR CHANGES IN THE WORK

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

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

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

§ 8.1.1.1 The Work shall be fully completed within the time limit and/or date stated in the Contract between Owner and Contractor.

§ 8.1.1.2 **Liquidated Damages**: If the Contractor should fail to fully complete the Work within the stated time (subject however to extension of time duly granted in the manner and for the causes specified in the General Conditions), Contractor shall be charged by and shall pay to Owner, as liquidated damages, the sum specified in Article 3 of the AIA document A101 – 2007 Edition, as modified by the Owner, per calendar day that the Work remains incomplete beyond the time fixed for completion. Contractor hereby agrees that from the nature of the project it would be impracticable and extremely difficult to fix the actual damage that would or will be suffered in the event that Contractor should fail to fully complete the Work by the time limit or date stated and the amount of the liquidated damages are fair and reasonable. The parties agree that the liquidated damages are a reasonable forecast of just compensation for the harm done to Owner that would be caused by Contractor's failure to timely complete the Work. Contractor agrees that the amount of liquidated damages due Owner may be deducted by Owner from any monies that might otherwise be or become payable to Contractor.

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

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

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

§ 8.2 PROGRESS AND COMPLETION

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

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

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes

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beyond the Contractor's control; or by delay authorized by Owner pending mediation, or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine provided, however, that such extension of Contract Time shall be net of any delays caused by or due to the fault or negligence of Contractor or that are otherwise the responsibility of Contractor and shall also be net of any contingency or "float" time allowance included in Contractor's construction schedule. Contractor shall, in the event of any occurrence likely to cause a delay, cooperate in good faith with Architect and Owner to minimize and mitigate the impact of any such occurrence and do all things reasonable under the circumstances to achieve this goal.

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

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. Contactor shall not be entitled to damages of any type for delays caused by Owner, his servant, agents, employees, or separate Contractors hired or retained by Owner. Contractor may receive an extension or extensions for additional time in which to complete the Contract but shall not receive any damages of any type for such delays. 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 intentional interference with Contractor's performance of the Work.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.1.1 **Commitment of Current Revenues Only.** As reflected in Section 4.5 of the modified AIA document A 101 – 2007 Edition by and between Owner and Contractor to which this document is attached as Exhibit A, in the event that, during any term hereof, the governing body of any party does not appropriate sufficient funds to meet the obligations of such party under this Contract, then any party may terminate this Contract upon ninety (90) days written notice to the other party. Each of the parties hereto agrees, however, to use its best efforts to secure funds necessary for the continued performance of this Agreement. The parties intend this provision to be a continuing right to terminate this Agreement at the expiration of each budget period of each party hereto pursuant to the provisions of Tex. Loc. Govt. Code Ann. § 271.903.

§ 9.2 SCHEDULE OF VALUES

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Owner and to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work, which in the aggregate equals the total Contract Sum, divided so as to facilitate payments to Subcontractors, supported by such evidence of correctness as Architect may direct or as required by Owner. This schedule, when approved by Architect and Owner, shall be used to monitor the progress of the Work and as a basis for Certificates for Payment. All items with entered values will be transferred by Contractor to the "Application and Certificate for Payment," and shall include the latest approved Change Orders and Construction Change Directives. Change Order values and Construction Change Directives values shall be broken down to show the various subcontracts. The Application for Payment shall be on a form as provided by Architect and approved by Owner. Each item shall show its total scheduled value, value of previous applications, value of the application, percentage completed, value completed, and value yet to be completed. All blanks and columns must be filled in, including every percentage complete figure. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

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

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allowances included in the Application for Payment shall be separately itemized with supporting data attached. The Application for Payment shall be accompanied by a certification by an office of Contractor to the effect that:

> There are no known mechanics', materialman's or laborers' liens or claims, or any other liens or claims, legal or equitable, contractual, statutory, or constitutional, outstanding or known to exist at the date of this Application; all due and payable bills with respect to the Work have been paid to date or are included in the amount requested in the current Application and there is no known basis for the filing of any mechanics', materialman's or laborers' lien or claim, or any other lien or claim, legal or equitable, contractual, statutory, or constitutional, on the Work; and waivers and releases from all Subcontractors, laborers, and material men for Work done and materials furnished have been obtained in such form as to constitute an effective waiver and release of all such liens and claims under the laws of the state within which the Project is located and shall be delivered to Architect together with Contractor's waiver and release of liens and claims at the time of submission of the Application for Payment.

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

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

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing by the Owner and Surety. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site. Under no circumstances will the Owner reimburse the Contractor for down payments, deposits, or other advance payments for materials or equipment.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work. The vesting of such title shall not impose any obligations on Owner or relieve Contractor of any of its obligations under the Contract, that Contractor shall remain responsible for damage to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in the Contract Documents.

§ 9.4 CERTIFICATES FOR PAYMENT

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

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and on all other information available to Architect including, without limitation, the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to

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correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified and that the aggregate amount theretofore paid to Contractor plus any applicable retention does not exceed the value of the completed portion of the Work. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, or (3) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

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

.1 defective Work not remedied;

.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;

.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;

.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

.5 damage to the Owner or a separate contractor;

.6 reasonable evidence that the Work will not be completed within the Contract Time, or that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

.7 failure to carry out the Work in accordance with the Contract Documents.

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

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.5.4 Notwithstanding any provision contained within this Article, if the Work has not attained Substantial Completion within the Contract Time, subject to extensions of time allowed under these Conditions, Architect may withhold any further payment to Contractor to the extent necessary to preserve sufficient funds to complete the construction of the Project and to cover liquidated damages assessed against Contractor up to the time of the Application for Payment and to the time it is reasonably anticipated that Substantial Completion will be achieved.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect. Owner may refuse to make payment on any Certificate for Payment for any default of the Contract, including, but not limited to, those defaults set forth in Sections 9.5.1.1 through 9.5.1.7. Owner shall not be deemed in default by reason of withholding payment while any of such defaults remain uncured.

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

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

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

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

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

§ 9.6.7 DELETED.

§ 9.7 FAILURE OF PAYMENT

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including but not limited to, those defaults set forth in Sections 9.5.1.1 through 9.5.1.7 pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.7.1 If Owner is entitled to reimbursement or payment from Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if Contractor fails to promptly make any payment due Owner, or if Owner incurs any costs and expenses to cure any default of Contractor or to correct defective Work, Owner shall have an absolute right to offset such amount against the Contract Sum and may, in Owner sole discretion, elect either to (i) deduct an amount equal to that which Owner is entitled from any payment then or thereafter due Contractor from Owner, or (ii) issue a written notice to Contractor reducing the Contract Sum by an amount equal to that which 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 (which Owner agrees to accept separately) is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

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

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

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§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of issuance of the certificate of final payment by Architect unless otherwise provided in the Certificate of Substantial Completion. The Work will not be considered suitable for Substantial Completion review until all Project systems included in the Work are operational as designed and scheduled, all designated or required governmental inspections and certifications have been made and posted, designated instruction of Owner's personnel in the operation of systems has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature, so that Owner and/or Owner's employees and if applicable, the public, could occupy the building on that date and the completing of the Work by Contractor would not materially interfere or hamper Owner's or Owner's employees and if applicable, the public, (or those claiming by, through, or under Owner) from normal County operations. As a further condition of Substantial Completion acceptance, Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or as agreed upon following the Date of Substantial Completion. If Contractor requests a Substantial Completion review, and Architect, after performing the Substantial Completion review, finds that the Project was not ready for the Substantial Completion review, then Contractor shall pay the Architect's fees for any additional Substantial Completion reviews.

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

§9.8.6 In order for the project or a major portion thereof to be considered substantially complete, the following conditions must be met: (1) All inspections by governmental authorities have jurisdiction over the project must have been finalized, any remedial work required by those authorities must have been completed, and Certificates of Occupancy and similar governmental approval forms must have been issued and copies delivered to the Owner and Architect. (2) All work, both interior and exterior, shall have been completed and cleaned except minor items which if completed after occupancy, will not, in the Owner's opinion, cause interference to the Owner's use of the building or any portion thereof. A significantly large number of items to be completed or corrected will preclude the Architect from issuing a Certificate of Substantial Completion. The Owner and Architect will be the sole judge of what constitutes a significantly large number of items.

§9.8.7 After the date of Substantial Completion of the Project is evidenced by the Certificate of Substantial Completion, the Contractor will be allowed a period of thirty (30) days, unless extended by mutual agreement or provision of the Contract, within which to correct all deficiencies attached to the Certificate of Substantial Completion. Failure of the Contractor to complete such corrections within the stipulated time will be reported to the Contractor's surety. In this report, the Contactor and surety will be informed that, should correction remain incomplete for fifteen (15) days, the Owner may initiate action to complete corrective work out of the remaining Contract funds in accordance with Article 14.

§ 9.9 PARTIAL OCCUPANCY OR USE

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

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

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

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

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

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

.1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
.2 failure of the Work to comply with the requirements of the Contract Documents;
.3 terms of special warranties required by the Contract Documents; or
.4 faulty or defective Work appearing after Substantial Completion.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

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

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

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor.

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

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

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

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

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

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons

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or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 DELETED.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents.

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

§ 10.3.6 DELETED.

§ 10.4 EMERGENCIES

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

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

.1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;

.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;

.4 Claims for damages insured by usual personal injury liability coverage;

.5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

.6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

.7 Claims for bodily injury or property damage arising out of completed operations; and

.8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

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

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

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

§ 11.1.5 SCHEDULE OF INSURANCE COVERAGES

§ 11.1.5.1 Contractor shall carry and keep in full force for the duration of the project the following Coverage.

Coverage	**Minimum Amounts and Limits**
Worker's Compensation	Statutory Limits
Employer's Liability:	
Bodily Injury by Accident	$500,000.00/each accident
Bodily Injury by Disease	$500,000.00/each employee
Bodily Injury by Disease	$500,000.00/Policy Limit
Commercial General Liability	
Bodily Injury/Property Damage	$1,000,000.00 per occurrence $2,000,000.00 aggregate

(Premises Operations, Independent Contractors, Product/Completed Operations, Personal Injury, Contractual Liability, Explosion, Collapse, Underground and Broad Form Property Damage).

Comprehensive Automobile Liability	$1,000,000.00 Combined Single Limit per Occurrence

Auto liability insurance shall be on a standard form written to cover all owned, hired, and non-owned automobiles. The policy shall be endorsed to include the Indemnified Parties (Section 3.18) as additional insured, contain cross-liability and severability of interest endorsements, and state that this insurance is primary insurance as regards to any other insurance carried by the Indemnified Parties (see Section 3.18).

§11.1.5.2 All policies shall contain special endorsements to include:

.1 The Owner as an additional insured (except for Worker's Compensation) and all other parties identified in Section 3.18 (Indemnified Parties);

.2 Wavier of Subrogation in favor of Owner under the Worker's Compensation and Employer's Liability policies.

.3 A statement that a notice shall be given to Owner by certified mail thirty (30) days prior to cancellation or upon any material changes in coverage.

4. Contain cross-liability and severability of interest endorsements;

5. state that this insurance is primary insurance in regard to any other insurance carried by an Indemnified Party (see Section 3.18);

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.6 the following coverage:

a. Premises/Operations;
b. Independent Contractors;
c. Completed Operations for a period of two years following the acceptance of Contractor's Work;
d. Comprehensive General Liability Endorsement to include Blanket Contractual Liability (specifically covering, but not limited to, the contractual obligations assumed by Contractor, Broad Form Property Damage, and Personal Injury Liability with employee and contractual exclusions removed);
e. Deletion of exclusions relative to Collapse, Explosion, and Underground Property Damage Hazards;
f. Personal Injury Liability with the contractual exclusions removed;
g. Cross Liability Endorsement.

§11.1.5.6 **Umbrella Excess Liability Insurance**

Bodily Injury and	$2,000,000.00 per occurrence
Property Damage	$2,000,000.00 aggregate

This policy shall be written on an umbrella excess basis above, the coverage described in this Article 11. The policy shall be endorsed to include the Indemnified Parties (Section 3.18) as additional insureds. The policy shall contain cross-liability and severability of interest endorsements and shall state, as regard the Indemnified Parties that the insurance is primary insurance as to any other insurance carried by any Indemnified Party. The policy shall be endorsed to provide the defense coverage obligation.

§11.1.6 Further, Contractor shall require all Subcontractors to carry similar insurance coverage and limits of liability as required under this Article 11, adjusted to the nature of Subcontractor's operations and submit same to Owner for approval before any Work commences.

§11.1.7 In the event Contractor fails to obtain the required certificates of insurance from the Subcontractor and a claim is made or suffered, Contractor shall indemnify, defend, and hold harmless the indemnified parties from any and all claims for which the required insurance would have provided coverage.

§11.1.8 **Workers' Compensation Insurance Coverage.**

§11.1.8.1 Definitions:

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

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

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

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§11.1.8.2 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.

§11.1.8.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

§11.1.8.4 If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

§11.1.8.5 The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

.1 a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

.2 no later than seven 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.

§11.1.8.6 The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

§11.1.8.7 The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

§11.1.8.8 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.

§11.1.8.9 The contractor shall contractually require each person with whom it contracts to provide services on a project, to:

.1 provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;

.2 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;

.3 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;

.4 obtain from each other person with whom it contracts, and provide to the contractor:

(a) a certificate of coverage, prior to the other person beginning work on the project; and

(b) 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;

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.5 retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

.6 notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

.7 contractually require each person with whom it contracts, to perform as required by paragraphs .1 - .7, with the certificates of coverage to be provided to the person for whom they are providing services.

§11.1.8.10 By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of 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.

§11.1.8.11 The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

§ 11.2 OWNER'S LIABILITY INSURANCE

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

§ 11.2.1 By signing the 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 coverage will be based on proper reporting or 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.

§11.2.2 Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Article 11.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Contractor shall obtain a builder's risk "all-risk" or equivalent policy in the amount of the initial Contract Sum (or if applicable Guaranteed Maximum Price), plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. The policy must also name its subcontractors and the Owner as additional insured, as their respective interests may appear. Coverage shall include material stored on-site and in transit. Such insurance will be with a company or companies lawfully authorized to do business in Texas. The policy must have the following endorsement: "This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises."

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework,

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testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.1.1 For any claim made against Contractor's Builder's Risk Insurance, the deductible shall not exceed $2,500.00 for a Contract Sum of less than $4 million. For a Contract Sum of $4 million or more, the deductible shall not exceed $5,000.00.

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

§11.3.1.1.3 The Contractor as fiduciary shall have power to adjust and settle a loss with insurers. The Contractor shall pay all Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements shall require Subcontractors to make payment to their Sub-subcontractors in similar manner. If required in writing by a party in interest, the Contractor as fiduciary shall, upon occurrence of insured loss, give bond for proper performance of the Contractor's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Contractor shall deposit in a separate account proceeds so received, which the Contractor shall distribute in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor under the insurance proceeds.

§ 11.3.1.2 DELETED.

§ 11.3.1.3 DELETED.

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

§ 11.3.1.5 Partial occupancy or use shall not affect the validity or coverage of property insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE DELETED.

§ 11.3.3 LOSS OF USE INSURANCE DELETED.

§ 11.3.4 DELETED.

§ 11.3.5 DELETED.

§ 11.3.6 DELETED.

§ 11.3.7 WAIVERS OF SUBROGATION

Contractor waives all rights against (1) Owner, the Subcontractors, Sub-subcontractors, agents and employees, and (2) the Architect, Architect's consultants, separate contractors if any, and any of their Subcontractors, Sub-subcontractors, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Article 11or other property insurance applicable to the Work, except such rights as Contractor has to proceeds of such insurance held by the Contractor as fiduciary. The Contractor, as appropriate, shall require of any separate contractors, Subcontractors, Sub-subcontractors, agents and employees of any of them, by appropriate

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written agreements, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

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

§ 11.3.9 DELETED.

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

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract Sum, as security for the faithful performance of the Contract and also a one hundred percent (100%) Payment Bond, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with the Contract. The Performance Bond and the Payment Bond may be in one or in separate instruments in accordance with local law. Surety companies must be authorized to write surety bonds in Texas and any such surety bond must comply with the requirements of Subchapter A of Chapter 3503 of the Texas Insurance Code.

§11.4.1.1 The Contractor shall deliver the required Bonds to the Owner not later than the date of the preconstruction meeting. All Bonds will be reviewed by the Architect for compliance with the Contract Documents prior to the execution of the Contract. In the event that Architect has any questions concerning the sufficiency of the bonds, Architect shall refer the bonds to Owner or Owner's representative for decision.

§11.4.1.2 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.

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

§ 11.4.3 The Bonds shall be provided to comply with the terms and provisions of Chapter 2253 of the Texas Government Code. Bonds shall be signed by an agent resident in the State of Texas and date of bond shall be on or after the date of execution of the Contract but prior to the date of the notice to proceed. If at any time during the continuance of the Contract, the surety of the Contractor's bonds becomes insufficient, the 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) days after notice to do so. In default thereof, the Contractor may be suspended, and all payment or money due to the Contractor withheld until sufficient bonds are provided by Contractor.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs

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and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the entire Work (unless otherwise provided in any Certificate of Partial Substantial Completion approved by the parties), or within such longer period of time as may be prescribed by law or in equity, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be defective or otherwise not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. This corrective period 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 performance of the Work. Corrective Work shall be warranted to be free from defects for a period equal to the longer of six (6) months after the completion of the corrective Work or one (1) year after the Date of Substantial Completion (subject to extension as previously described) or such longer period of time as may be prescribed by law or in equity, or expiration of the term of any applicable special warranty, if applicable, required by the Contract Documents. Any defect in such Work shall be corrected again by Contractor promptly upon notice of the defect from Owner. This obligation under this Section 12.2.2.1 shall survive acceptance of the Work under the Contract and termination of the Contract by the Owner. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

§12.2.2.4 Just before the termination of the various guarantee periods, Contractor shall accompany Owner's agent and Architect on an inspection tour of the building and shall note any defects and shall start remedying these defects within ten (10) days of the inspection tour and shall prosecute the Work without interruption until accepted by Owner and Architect, even though such prosecution should extend beyond the limit of the guarantee period.

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

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

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents or under law or in equity. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

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§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located.

§ 13.2 SUCCESSORS AND ASSIGNS

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

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

§ 13.3 WRITTEN NOTICE

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

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law or in equity or by any other agreement, and any such rights and remedies shall survive the acceptance of the Work and/or any termination of the Contract Documents.

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

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Architect, Owner and Contractor shall be afforded a reasonable opportunity to attend, observe, and witness all inspections and tests of the Work. Architect or Owner may at any time request and receive from Contractor satisfactory evidence that materials, supplies, or equipment are in conformance with the Contract Documents. The conduct of any inspection or test and the receipt of any approval shall not operate to relieve Contractor from its obligations under the Contract Documents unless specifically so stated by Owner in writing.

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

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§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, or reveal faulty or otherwise defective Work, or if the necessity of any such testing, inspection, or approval procedures arises out of the fault, neglect, or omission of Contractor, Contractor shall bear all costs of such testing, inspection, and approval procedures and all other costs made necessary by Contractor's failures, including, without limitation, those costs of repeated and additional procedures and compensation for Architect's services and expenses of Owner's personnel and consultant fees and expenses. Such costs shall be paid by Contractor within ten (10) days of receipt of invoice from Owner with supporting data attached.

§ 13.5.4 Required certificates of testing, inspection or approval shall, be secured by the Contractor and delivered to the Owner, unless such testing or inspection services are arranged by Owner.

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

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

§ 13.6 INTEREST

An overdue payment bears interest at the legal rate established by the Texas Government Code, currently in Section 2251.025, or in the event no rate is so established, at the rate of one percent (1%) each month. Any such payment shall be deemed overdue on the thirty-first (31st) day after Owner receives an invoice from Contractor.

§ 13.7 TIME LIMITS ON CLAIMS

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract within the time period specified by applicable law.

§ 13.8.1 The Contractor shall maintain policies of employment as follows: "The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin. Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. Such action shall include, but not be limited to, the following: employment, promotion, demotion, or transfer; recruitment, or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants, notices setting forth the nondiscrimination policies."

§13.8.1.1 The Contractor and the Contractor'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, color, sex, or national origin.

§13.9 CERTIFICATION OF ASBESTOS-FREE PROJECT

§13.9.1 Contractor shall submit to the Architect a letter addressed to the Owner certifying that all materials used in the construction of this Project contain less than 0.10 by weight of asbestos and for which it can be demonstrated that, under reasonably foreseeable job site conditions, will not release asbestos fibers in excess of 0.1 fibers per cubic centimeter. Certification letters shall be dated, shall reference this specific Project, and shall be signed by not less than two (2) officers of the construction company.

§13.9.2 Certification shall further state that should asbestos fibers be found at this Project in concentrations greater than 0.1 fibers per cubic centimeter, that Contractor shall be responsible for determining which materials contain asbestos fibers and shall take corrective action to remove those materials from the Project at no additional cost to the Owner.

§13.9.3 Final payment shall not be made until this letter of certification has been received.

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ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

.1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or

.2 An act of government, such as a declaration of national emergency that requires all Work to be stopped.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon fourteen (14) days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed in accordance with the Contract Documents.

§ 14.1.4 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Sections 14.1.1 and 14.1.2.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor

.1 refuses or fails to supply enough properly skilled workers or proper materials and equipment;

.2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;

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

.4 disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents);

.5 is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of Contractor's creditors, or a trustee or receiver is appointed for Contractor or for any of its property, or files a petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar law; or

.6 otherwise does not fully comply with the Contract Documents.

§ 14.2.2 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 Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

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

§ 14.2.4 To the extent the costs of completing Work, including compensation for additional professional services and expenses, exceed those costs that would have been payable to Contractor to complete the Work except for Contractor's default, Contractor will pay the difference to Owner, and this obligation for payment shall survive termination of the Contract. Such costs incurred by Owner will be determined by Owner and confirmed by Architect.

§14.2.5 In addition to Owner's right to remove Contractor from any part of Work pursuant to the Contract Documents,

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Owner may, at any time, at will and without cause, terminate any part of Work or any subcontract or all remaining Work for any reason whatsoever by giving seven (7) days' prior written notice to Contractor specifying the part of Work or subcontract to be terminated and the effective date of termination. Contractor shall continue to prosecute the part of Work not terminated. If any part of Work or subcontract is so terminated, Contractor shall be entitled to payment for Work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for costs directly related to Work thereafter performed by Contractor in terminating such Work or subcontract including reasonable demobilization and cancellation charges provided said Work is authorized in advance by Architect and Owner. No payment shall be made by Owner, however, to the extent that such Work or subcontract is, was, or could have been terminated under the Contract Documents or an equitable adjustment is made or denied under another provision of the Contract. In case of such termination, Owner will issue a Construction Change Directive or authorize a Change Order making any required adjustment to the Date of Substantial Completion and/or the Contract Sum. For the remainder of the Work, the Contract Documents shall remain in full force and effect.

§14.2.6 Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Section 14.2.5.

§14.2.7 Upon a determination by a court of competent jurisdiction that termination of Contractor pursuant to Section 14.2.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Section 14.2.5 and Contractor's remedy for wrongful termination shall be limited to the recovery of the payments permitted for termination for convenience as set forth in Section 14.2.5.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

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

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

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

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

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

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

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

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, without any overhead or profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 CLAIMS

§ 15.1.1 DEFINITION

A Claim is a demand or assertion by one of the parties seeking, as a matter of right adjustment, or interpretation of the Contract Terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or

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relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. Claims must be by written notice.

§ 15.1.2 NOTICE OF CLAIMS

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Said written notice of claims shall state specifically the reason for the claim, the date or dates of the cause or causes of the claim, and if any extension of time is requested, the number of days of extension requested.

§ 15.1.3 CONTINUING CONTRACT PERFORMANCE

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

§ 15.1.4 CLAIMS FOR ADDITIONAL COST

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner and Architect. No such claim shall be value unless so made. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 CLAIMS FOR ADDITIONAL TIME

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

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction. Extensions of time may be requested for any month of construction for days lost due to adverse weather in excess of the normally expected lost time; provided, however, if Architect determines that the seasonal average of adverse weather days during construction is less than would be normally expected, no Change Order shall be issued and the request for extension of time shall be denied.

§ 15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Contractor shall not be entitled to claims for additional time and/or increase in Contract Price due to a problem or non-performance of a subcontractor.

§ 15.1.7 In the event the Contractor fails to achieve substantial completion by the date indicated in the Contract, and extended by approved Change Order, the Owner shall be entitled to liquidated damages in the amount as stated in Section 3.1.1 of the modified AIA document A 101 – 2007 Edition by and between Owner and Contractor to which this document is attached as Exhibit A per day until the Work is substantially completed. 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 Owner in the event that the Work is not completed within the agreed time, or within the legally extended time, if any. Said sum shall be considered as liquidated damages only, the exact ascertainment of which is difficult and in no sense be considered a penalty.

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

§ 15.2 INITIAL DECISION

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a

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condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

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

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

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

§ 15.2.6 DELETED.

§ 15.2.6.1 DELETED.

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

§ 15.2.8 DELETED.

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract may be subject to mediation as a condition precedent to litigation.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation. 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.

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

§ 15.4 ARBITRATION

The parties expressly agree that disputes or claims arising under the Contract Documents shall not be subject to arbitration unless mutually agreed by the parties in writing.

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MCALLEN INDEPENDENT SCHOOL DISTRICT

By: _____

_____
Date

APPROVED AS TO FORM
ATLAS, HALL & RODRIGUEZ, LLP

BY:_____
Stephen L. Crain

INC.

By: _____
Printed Name: _____
Title: _____

_____
Date

DRAFT

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SECTION 01200 PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Allowances.

B. Contingency allowances.

C. Testing and inspection allowances.

D. Schedule of Values.

E. Application for Payment.

F. Change procedures.

G. Defect assessment.

H. Unit prices.

I. Alternates.

1.2 ALLOWANCES

A. Costs Included in Allowances: Cost of product to Contractor or Subcontractor, less applicable trade discounts; delivery to Site and applicable taxes unless stated otherwise in Allowance Schedule.

B. Costs Not Included in Allowances but Included in Contract Sum/Price: Product handling at Site including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing unless stated otherwise in Allowance Schedule.

C. Architect/Engineer Responsibilities:
   1. Consult with Contractor for consideration and selection of products.
   2. Select products in consultation with Owner and transmit decision to Contractor.
   3. Prepare Change Order.

D. Contractor Responsibilities:
   1. Assist Architect/Engineer in selection of products, suppliers, and installers.
   2. Obtain proposals from suppliers and installers and offer recommendations.
   3. Upon notification of selection by Engineer, execute purchase agreement with designated supplier and installer.
   4. Arrange for and process Shop Drawings, Product Data, and Samples. Arrange for delivery.
   5. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.

E. Differences in costs will be adjusted by Supplemental Instructions.

F. Allowance Schedule: N/A

1.3 CONTINGENCY ALLOWANCES

A. Include in Contract a stipulated sum/price of $15,000 for use upon Owner's instruction as a contingency allowance.

B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, will be included in Supplemental Instructions authorizing expenditure of funds from this contingency allowance. No bonding, overhead, and profit will be included.

C. Funds will be drawn from contingency allowance only by Supplemental Instructions.

D. At closeout of Contract, funds remaining in contingency allowance will be credited to Owner by Change Order.

1.4 SCHEDULE OF VALUES

A. Submit printed and electronic file schedule on AIA G702 - Continuation Sheet for G703 or similar document provided by Engineer.

B. Submit Schedule of Values as electronic file within 15 days after date of Owner-Contractor Agreement for approval.

C. Format: Use Table of Contents of this Project Manual. Identify each line item with number and title of major Specification Section. Also identify Site mobilization, bonds and insurance.

D. Include in each line item amount of allowances as specified in this Section. For unit cost allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.

E. Include separately from each line item, direct proportional amount of Contractor's overhead and profit.

F. Revise schedule to list approved Change Orders with each Application for Payment.

1.5 APPLICATION FOR PAYMENT

A. Submit three copies AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet for G702 or similar document provided by Engineer.

B. Content and Format: Use Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Submit at intervals stipulated in the Agreement.

E. Submit three copies of waivers requested by Owner.

F. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:

1. Partial release of liens from major Subcontractors and vendors.
2. Record Documents as specified in Section 01700 - Execution Requirements, for review by Owner, which will be returned to Contractor.
3. Affidavits attesting to off-Site stored products.
4. Construction Progress Schedule, revised and current as specified in Section 01330 - Submittal Procedures.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Submittals Schedule (preliminary if not final).
5. List of Contractor's staff assignments.
6. List of Contractor's principal consultants.
7. Initial progress report.
8. Report of preconstruction conference.
9. Certificates of insurance and insurance policies.
10. Performance and payment bonds.

H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. "Contractor's Affidavit of Payment of Debts and Claims."
5. "Contractor's Affidavit of Release of Liens."
6. "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

1.6 CHANGE PROCEDURES

A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Architect/Engineer of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Architect/Engineer; establish procedures for handling queries and clarifications.
   1. Use Standard - Request for Information document for requesting interpretations.
   2. Architect/Engineer may respond with a direct answer on the Request for Interpretation form.

D. Architect/Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions.

E. Architect/Engineer may issue Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within 7 days.

F. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.

G. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of that which are not predetermined, execute Work under Construction Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Change Order.

H. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

I. Correlation of Contractor Submittals:
   1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
   2. Promptly revise Progress Schedules to reflect change in Contract Time, revise subschedules to adjust times for other items of Work affected by the change, and resubmit.
   3. Promptly enter changes in Record Documents.

1.7 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer will direct appropriate remedy or adjust payment.

C. Individual Specification Sections may modify these options or may identify specific formula or percentage sum/price reduction.

D. Authority of Engineer to assess defects and identify payment adjustments is final.

E. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:
   1. Products wasted or disposed of in a manner that is not acceptable.
   2. Products determined as unacceptable before or after placement.
   3. Products not completely unloaded from transporting vehicle.
   4. Products placed beyond lines and levels of the required Work.
   5. Products remaining on hand after completion of the Work.
   6. Loading, hauling, and disposing of rejected products.

1.8 UNIT PRICES

A. Authority: Measurement methods are delineated in individual Specification Sections.

B. Measurement methods delineated in individual Specification Sections complement criteria of this Section. In event of conflict, requirements of individual Specification Section govern.

C. Take measurements and compute quantities. Architect/Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated on Proposal Form are for Contract purposes only. Actual quantities provided shall determine payment.
   1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at contracted unit sum/prices.

E. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Architect/Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

G. Measurement of Quantities:
   1. Weigh Scales: Inspected, tested, and certified by applicable State of Texas weights and measures department within past year.
   2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
   3. Metering Devices: Inspected, tested, and certified by applicable State of Texas department within past year.
   4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
   5. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
   6. Measurement by Area: Measured by square dimension using mean length and width or radius.
   7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.

8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

1.9 ALTERNATES

A. Alternates quoted on Proposal Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement. The Owner-Contractor Agreement may identify certain Alternates to remain an Owner option for a stipulated period of time.

B. Coordinate related Work and modify surrounding Work. Description for each Alternate is recognized to be abbreviated but requires that each change shall be complete for scope of Work affected.
   1. Coordinate related requirements among Specification Sections as required.
   2. Include as part of each Alternate: Miscellaneous devices, appurtenances, and similar items incidental to or necessary for complete installation.
   3. Coordinate Alternate with adjacent Work and modify or adjust as necessary to ensure integration.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

ADMINISTRATIVE REQUIREMENTS

SECTION 013000

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and Project conditions.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Preinstallation meetings.

F. Closeout meeting.

G. Alteration procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various Sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practical; place runs parallel with lines of building. Use spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
   1. Coordination Drawings: Prepare as required to coordinate all portions of Work. Show relationship and integration of different construction elements that require coordination during fabrication or installation to fit in space provided or to function as intended. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are important.

D. Coordination Meetings: In addition to other meetings specified in this Section, hold coordination meetings with personnel and Subcontractors to ensure coordination of Work.

E. In finished areas conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion.

G. After Owner's occupancy of premises, coordinate access to Site for correction of defective Work and Work not complying with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Engineer will schedule and preside over meeting after Notice of Award.

B. Attendance Required: Architect/Engineer, Owner, Resident Project Representative, appropriate governmental agency representatives, Construction Project Manager, and Contractor.

C. Minimum Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and Progress Schedule.
5. Designation of personnel representing parties in Contract, and Architect/Engineer.
6. Communication procedures.
7. Procedures and processing of requests for interpretations, field decisions, field orders, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.
9. Critical Work sequencing.

D. Construction Project Manager: Record minutes and distribute copies to participants within seven days after meeting, with Architect/Engineer, Owner, and those affected by decisions made.

1.4 SITE MOBILIZATION MEETING

A. Construction Project Manager will schedule and preside over meeting at Project Site prior to Contractor occupancy.

B. Attendance Required: Architect/Engineer, Owner, Contractor, Contractor's superintendent, Construction Project Manager.

C. Minimum Agenda:
1. Use of premises by Owner and Contractor.
2. Owner's requirements.
3. Construction facilities and controls.
4. Temporary utilities.
5. Security and housekeeping procedures.
6. Schedules.
7. Procedures for testing.
8. Procedures for maintaining record documents.
9. Requirements for startup of equipment.
10. Inspection and acceptance of equipment put into service during construction period.

D. Construction Project Manager: Record minutes and distribute to participants within 7 days after meeting.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum weekly intervals.

B. Construction Project Manager shall make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, and Architect/Engineer, Owner, as appropriate to agenda topics for each meeting.

D. Minimum Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittal schedule and status of submittals.
6. Review of off-Site fabrication and delivery schedules.
7. Maintenance of Progress Schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on Progress Schedule and coordination.
13. Other business relating to Work.

E. Construction Project Manager: Record minutes and distribute to participants within 7 days after meeting.

1.6 PREINSTALLATION MEETINGS

A. When required in individual Specification Sections, convene preinstallation meetings at Project Site before starting Work of specific Section.

B. Require attendance of parties directly affecting, or affected by, Work of specific Section.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Prepare agenda and preside over meeting:
1. Review conditions of installation, preparation, and installation procedures.
2. Review coordination with related Work.

E. Record minutes and distribute to participants within seven days after meeting.

1.7 CLOSEOUT MEETING

A. Schedule Project closeout meeting with sufficient time to prepare for requesting Substantial Completion. Preside over meeting and be responsible for minutes.

B. Attendance Required: Contractor, Construction Project Manager, Major Subcontractors, Architect/Engineer, Owner, and others appropriate to agenda.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Minimum Agenda:
   1. Start-up of facilities and systems.
   2. Operations and maintenance manuals.
   3. Testing, adjusting, and balancing.
   4. System demonstration and observation.
   5. Operation and maintenance instructions for Owner's personnel.
   6. Contractor's inspection of Work.
   7. Contractor's preparation of an initial "punch list."
   8. Procedure to request Architect/Engineer inspection to determine date of Substantial Completion.
   9. Completion time for correcting deficiencies.
   10. Inspections by authorities having jurisdiction.
   11. Certificate of Occupancy and transfer of insurance responsibilities.
   12. Partial release of retainage.
   13. Final cleaning.
   14. Preparation for final inspection.
   15. Closeout Submittals:
      a. Project record documents.
      b. Operating and maintenance documents.
      c. Operating and maintenance materials.
      d. Affidavits.
   16. Final Application for Payment.
   17. Contractor's demobilization of Site.
   18. Maintenance.

E. Record minutes and distribute copies to participants within 7 days after meeting.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 ALTERATION PROCEDURES

A. Entire facility will be occupied for normal operations during progress of construction. Cooperate with Owner in scheduling operations to minimize conflict and to permit continuous usage.
   1. Perform Work not to interfere with operations of occupied areas.

2. Keep utility and service outages to a minimum and perform only after written approval of Owner.
3. Indoor temperature control must be maintained at all times.
4. Clean Owner-occupied areas daily. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.

B. Materials: As specified in product Sections; match existing products with new [**and salvaged**] products for patching and extending Work.

C. Employ skilled and experienced installer to perform alteration and renovation Work.

D. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion. Comply with Section 01700 - Execution Requirements.

E. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

F. Remove debris and abandoned items from area and from concealed spaces.

G. Prepare surface and remove surface finishes to permit installation of new Work and finishes.

H. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.

I. Remove, cut, and patch Work to minimize damage and to permit restoring products and finishes to original condition.

J. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with neat transition to adjacent finishes.

K. Where new Work abuts or aligns with existing Work, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

END OF SECTION

SECTION 013230 CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittals.

B. Quality assurance.

C. Format for network analysis schedules.

D. Network analysis schedules.

E. Bar chart schedules.

F. Review and evaluation.

G. Updating schedules.

H. Distribution.

1.2 SUBMITTALS

A. Within 10 days after date of Owner-Contractor Agreement**,** submit proposed preliminary network diagram defining planned operations for first **60** days of Work, with general outline for remainder of Work.

B. Participate in review of preliminary and complete network diagrams jointly with Architect/Engineer.

C. Within 20 days after joint review of proposed preliminary network diagram, submit draft of proposed complete network diagram for review. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete network analysis consisting of network diagrams and mathematical analyses.

E. Submit updated network schedules every 14 days.

F. Any changes to schedule must be submitted at least 7 days in advance.

G. Post as electronic file to Project Team.

H. Submit network schedules under transmittal letter form specified in Section 01330 - Submittal Procedures.

I. Schedule Updates:

1. Overall percent complete, projected and actual.
2. Completion progress by listed activity and sub activity, to within **five working** days prior to submittal.
3. Changes in Work scope and activities modified since submittal.
4. Delays in submittals or resubmittals, deliveries, or Work.
5. Adjusted or modified sequences of Work.
6. Other identifiable changes.
7. Revised projections of progress and completion.

J. Narrative Progress Report:
1. Submit with each monthly submission of Progress Schedule.
2. Summary of Work completed during the past period between reports.
3. Work planned during the next period.
4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.
5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
6. Corrective action taken or proposed.

1.3 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel specializing in CPM scheduling with two years' minimum experience in scheduling construction work of complexity comparable to the Project and having use of computer facilities capable of delivering detailed graphic printout within 48 hours of request.

B. Contractor's Administrative Personnel: 2 years' minimum experience in using and monitoring CPM schedules on comparable Projects.

1.4 FORMAT FOR NETWORK ANALYSIS SCHEDULE

A. Listings: Reading from left to right, in ascending order for each activity. Identify each activity with applicable Specification Section number.

B. Scale and Spacing: To allow for notations and revisions.

1.5 NETWORK ANALYSIS SCHEDULES

A. Prepare network analysis diagrams and supporting mathematical analyses using critical path method.

B. Illustrate order and interdependence of activities and sequence of Work; how start of given activity depends on completion of preceding activities, and how completion of activity may restrain start of subsequent activities.

C. Illustrate complete sequence of construction by activity, identifying Work of separate stages. Indicate dates for submittals and return of submittals; dates for procurement and delivery of critical products; and dates for installation and provision for testing. Include legend for symbols and abbreviations used.

D. Mathematical Analysis: Tabulate each activity of detailed network diagrams using calendar dates, and identify for each activity:
   1. Preceding and following event numbers.
   2. Activity description.
   3. Estimated duration of activity, in maximum **15**-day intervals. Status of critical activities.
   4. Earliest start date.
   5. Earliest finish date.
   6. Actual start date.
   7. Actual finish date.
   8. Latest start date.
   9. Latest finish date.
   10. Total and free float; accrue float time to Owner and to Owner's benefit.
   11. Monetary value of activity, keyed to Schedule of Values.
   12. Percentage of activity completed.
   13. Responsibility.

E. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, of accepting revised completion dates, and of recomputing of scheduled dates and float.

F. Required Sorts: List activities in sorts or groups:
   1. By preceding Work item or event number from lowest to highest.
   2. By longest float, then in order of early start.
   3. By responsibility in order of earliest possible start date.
   4. In order of latest allowable start dates.
   5. In order of latest allowable finish dates.
   6. Contractor's periodic payment request sorted by Schedule of Values list.
   7. List of basic input data-generating report.
   8. List of activities on critical path.

G. Prepare subschedules for each stage of Work and Sequencing of Construction Plan identified in Section 01100 – Summary.

H. Coordinate contents with Schedule of Values in Section 01330 - Submittal Procedures.

1.6 BAR CHART SCHEDULES

A. Format: Bar chart Schedule, to include at least:
   1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:

      a. Subcontract Work.
      b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
      c. Move-in and other preliminary activities.
      d. Equipment and equipment system test and startup activities.
      e. Project closeout and cleanup.
      f. Work sequences, constraints, and milestones.

   2. Listings identified by Specification Section number.

3. Identification of the following:

    a. Horizontal time frame by year, month, and week.
    b. Duration, early start, and completion for each activity and subactivity.
    c. Critical activities and Project float.
    d. Subschedules to further define critical portions of Work.

1.7 REVIEW AND EVALUATION

A. Participate in joint review and evaluation of schedules with Architect/Engineer at each submittal.

B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.

C. After review, revise schedules incorporating results of review, and resubmit within 10 days.

1.8 UPDATING SCHEDULES

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.

C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

D. Upon approval of a Change Order, include the change in the next schedule submittal.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit sorts as required to support recommended changes.

G. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect including effects of changes on schedules of separate Contractors.

1.9 DISTRIBUTION

A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, to Subcontractors, suppliers, Architect/Engineer, Owner.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

SECTION 013300 SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Definitions.

B. Submittal procedures.

C. Construction progress schedules.

D. Proposed product list.

E. Product data.

F. Use of electronic CAD files of Project Drawings.

G. Shop Drawings.

H. Samples.

I. Other submittals.

J. Design data.

K. Test reports.

L. Certificates.

M. Manufacturer's instructions.

N. Manufacturer's field reports.

O. Erection Drawings.

P. Construction photographs.

Q. Contractor review.

R. Architect/Engineer review.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect/Engineer's and Construction Project Manager's responsive action.

B. Informational Submittals: Written and graphic information and physical Samples that do not require Architect/Engineer's and Construction Project Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Transmit each submittal with Transmittal Letter.

B. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.

C. Apply Contractor's stamp, signed or initialed, certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is according to requirements of the Work and Contract Documents.

D. Schedule submittals to expedite Project, and deliver to Engineer at business address. Coordinate submission of related items.

E. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.

F. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.

G. Allow space on submittals for Contractor and Architect/Engineer review stamps.

H. When revised for resubmission, identify changes made since previous submission.

I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

J. Submittals not requested will not be recognized nor processed.

K. Incomplete Submittals: Architect/Engineer will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Architect/Engineer.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Comply with Section 013230 - Construction Progress Schedules.

1.5 PROPOSED PRODUCT LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

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

1.6 PRODUCT DATA

A. Product Data: Action Submittal: Submit to Architect/Engineer for review for assessing conformance with information given and design concept expressed in Contract Documents.

B. Submit number of copies Contractor requires, plus two copies Engineer will retain.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01700 - Execution Requirements.

1.7 SHOP DRAWINGS

A. Shop Drawings: Action Submittal: Submit to Architect/Engineer for assessing conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.
   1. Include signed and sealed calculations to support design.
   2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
   3. Make revisions and provide additional information when required by authorities having jurisdiction.

D. Submit number of opaque reproductions Contractor requires, plus **two** copies Engineer will retain.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01700 - Execution Requirements.

1.8 SAMPLES

A. Samples: Action Submittal: Submit to Architect/Engineer for assessing conformance with information given and design concept expressed in Contract Documents.

B. Samples for Selection as Specified in Product Sections:
   1. Submit to Architect/Engineer for aesthetic, color, and finish selection.
   2. Submit Samples of finishes, textures, and patterns for Architect/Engineer selection.

C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.

D. Include identification on each Sample, with full Project information.

E. Submit number of Samples specified in individual Specification Sections; Engineer will retain one Sample.

F. Reviewed Samples that may be used in the Work are indicated in individual Specification Sections.

G. Samples will not be used for testing purposes unless specifically stated in Specification Section.

H. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01700 - Execution Requirements.

1.9 OTHER SUBMITTALS

A. Closeout Submittals: Comply with Section 01700 - Execution Requirements.

B. LEED Submittals: Comply with Section 01351 - Sustainable Project Requirements.

C. Permits: Within 15 days after date of Owner-Contractor Agreement, submit a list of permits and licenses to be obtained, identifying the granting agency and the required date of permit submittal.

1.10 DESIGN DATA

A. Informational Submittal: Submit data for Architect/Engineer's knowledge as Contract administrator or for Owner.

B. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.11 TEST REPORTS

A. Informational Submittal: Submit reports for Architect/Engineer's knowledge as Contract administrator or for Owner.

B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.12 CERTIFICATES

A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Architect/Engineer, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product but must be acceptable to Architect/Engineer.

1.13 MANUFACTURER'S INSTRUCTIONS

A. Informational Submittal: Submit manufacturer's installation instructions for Architect/Engineer's knowledge as Contract administrator or for Owner.

B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Architect/Engineer in quantities specified for Product Data.

C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.14 MANUFACTURER'S FIELD REPORTS

A. Informational Submittal: Submit reports for Architect/Engineer's knowledge as Contract administrator or for Owner.

B. Submit report within 5 days of observation to Architect/Engineer for information.

C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.15 ERECTION DRAWINGS

A. Informational Submittal: Submit Drawings for Architect/Engineer's knowledge as Contract administrator or for Owner.

B. Submit Drawings for information assessing conformance with information given and design concept expressed in Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect/Engineer or Owner.

1.16 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of construction throughout progress of Work produced by an experienced photographer acceptable to Architect/Engineer.

B. Twice monthly submit photographs.

C. Digital Images: Deliver complete set of digital image electronic files on CD-ROM to Owner with Project record documents. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as sensor, uncropped.
   1. Digital Images: Uncompressed TIFF format, produced by digital camera with minimum sensor size of 4.0 megapixels, and image resolution of not less than 1024 by 768 pixels.
   2. Date and Time: Include date and time in filename for each image.

1.17 CONTRACTOR REVIEW

A. Review for compliance with Contract Documents and approve submittals before transmitting to Engineer.

B. Contractor: Responsible for:
   1. Determination and verification of materials including manufacturer's catalog numbers.
   2. Determination and verification of field measurements and field construction criteria.
   3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
   4. Determination of accuracy and completeness of dimensions and quantities.
   5. Confirmation and coordination of dimensions and field conditions at Site.
   6. Construction means, techniques, sequences, and procedures.
   7. Safety precautions.
   8. Coordination and performance of Work of all trades.

C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.

D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect/Engineer.

1.18 ARCHITECT/ENGINEER REVIEW

A. Do not make "mass submittals" to Architect/Engineer. "Mass submittals" are defined as six or more submittals or items in one day or **15** or more submittals or items in one week. If "mass submittals" are received, Architect/Engineer's review time stated above will be extended as necessary to perform proper review. Architect/Engineer will review "mass submittals" based on priority determined by Architect/Engineer after consultation with Owner and Construction Project Manager.

B. Informational submittals and other similar data are for Architect/Engineer's information, do not require Architect/Engineer's responsive action, and will not be reviewed or returned with comment.

C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.

D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order, or Construction Change Directive.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

1.1 SECTION INCLUDES

A. Temporary facilities under Construction Management Agreement.

B. Temporary Utilities:
   1. Temporary sanitary facilities.

C. Construction Facilities:
   1. Field offices and sheds.
   2. Vehicular access.
   3. Parking.
   4. Progress cleaning and waste removal.
   5. Project identification.
   6. Traffic regulation.
   7. Fire-prevention facilities.

D. Temporary Controls:
   1. Barriers.
   2. Enclosures and fencing.
   3. Security.
   4. Water control.
   5. Dust control.
   6. Erosion and sediment control.
   7. Noise control.
   8. Pest and rodent control.
   9. Pollution control.

E. Removal of utilities, facilities, and controls.

1.2 REFERENCES

A. ASTM International:
   1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   3. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 TEMPORARY FACILITIES UNDER CONSTRUCTION MANAGEMENT AGREEMENT

A. Temporary Provisions Provided by Construction Manager:
   1. Temporary barriers, barricades, covered walkways, fencing, exterior closures, and interior closures.
   2. Temporary field offices.
   3. Cleaning during construction.
   4. Access roads and approaches.

5. Temporary elevator.
6. Temporary sanitary facilities.
7. Temporary heating and ventilating after enclosure.
8. Temporary electrical service and distribution system for power and lighting.
9. Temporary telephone and internet service.

B. Each Contractor: Coordinate provisions with Construction Manager and provide the following items as necessary for execution of the Work including associated costs:
1. Construction aids.
2. Temporary fire protection, dust control, erosion and sediment control, water control, noise control, and other necessary temporary controls.
3. Temporary barriers, barricades, and similar devices as necessary for safety and protection of construction personnel and public.
4. On Construction Manager's approval, may provide temporary field office including electrical service and temporary telephone.
5. Temporary tree and plant protection.
6. Temporary heating before building enclosure.
7. Electrical service required in addition to temporary service and distribution provided by Construction Manager.
8. Temporary provisions for protection of installed Work.

1.4 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of Project mobilization.

B. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and inspection of products to suit requirements in Section 01 60 00 - Product Requirements.

C. Preparation: Fill and grade Sites for temporary structures sloped for drainage away from buildings.

D. Maintenance and Cleaning:
1. **Weekly** janitorial services for field offices; periodic cleaning and maintenance for sheds and storage areas.
2. Maintain walks free of mud, water, snow, and the like.

E. Removal: At completion of Work remove buildings, foundations, utility services, and debris. Restore areas to same or better condition as original condition.

1.5 VEHICULAR ACCESS

A. Construct temporary access roads from public thoroughfares to serve construction area, of width and load-bearing capacity to accommodate unimpeded traffic for construction purposes.

B. Construct temporary bridges and culverts to span low areas and allow unimpeded drainage.

C. Extend and relocate vehicular access as Work progress requires and provide detours as necessary for unimpeded traffic flow.

D. Locate as **approved by Owner**.

E. Provide unimpeded access for emergency vehicles. Maintain **20** wide driveways with turning space between and around combustible materials.

F. Provide and maintain access to **fire hydrants and control valves** free of obstructions.

G. Provide means of removing mud from vehicle wheels before entering streets.

1.6 PARKING

A. **Arrange for** temporary surface parking areas to accommodate construction personnel.

B. Locate as **approved by Owner**.

C. If Site space is not adequate, provide additional off-Site parking.

D. Use of existing parking facilities used by construction personnel is **not** permitted.

E. Do not allow heavy vehicles or construction equipment in parking areas.

F. Do not allow vehicle parking on existing pavement.

G. Maintenance:
1. Maintain traffic and parking areas in sound condition **free of excavated material, construction equipment, products.**
2. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original condition.

1.7 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, before enclosing spaces.

C. Broom and vacuum clean interior areas before starting surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from Site **weekly** and dispose of off-Site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.8 PROJECT IDENTIFICATION

A. Project Identification Sign:
   1. **One** painted sign[**s**] of construction, design, and content shown on Drawings, location designated.
   2. Content:
      a. Project title and name of Owner.
      b. Names and titles of authorities.
      c. Names and titles of Architect/Engineer and Consultants.
      d. Name of Prime Contractor.
   3. Graphic Design, Colors, and Style of Lettering: Designated by Architect/Engineer.

B. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

C. Maintenance: Maintain clean signs and supports; repair deterioration and damage.

D. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.9 TRAFFIC REGULATION

A. Signs, Signals, and Devices:
   1. Post-Mounted and Wall-Mounted Traffic Control and Informational Signs: As approved by authorities having jurisdiction.
   2. Traffic Control Signals: As approved by local jurisdictions.
   3. Traffic Cones, Drums, Flares, and Lights: As approved by authorities having jurisdiction.
   4. Flag Person Equipment: As required by authorities having jurisdiction.

B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

C. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

D. Haul Routes:
   1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.
   2. Confine construction traffic to designated haul routes.
   3. Provide traffic control at critical areas of haul routes to regulate traffic and to minimize interference with public traffic.

E. Traffic Signs and Signals:
   1. Provide signs at approaches to Site and on Site, at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.
   2. Provide, operate, and maintain traffic control signals to direct and maintain orderly flow of traffic in areas under Contractor's control and areas affected by Contractor's operations.
   3. Relocate signs and signals as Work progresses, to maintain effective traffic control.

F. Removal:
   1. Remove equipment and devices **when no longer required.**
   2. Repair damage caused by installation.

1.10 FIRE-PREVENTION FACILITIES

A. Prohibit smoking within buildings under construction **and demolition**.

B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

1.11 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations **and demolition**.

B. Provide barricades and covered walkways required by authorities having jurisdiction for public rights-of-way **and for public access to existing building**.

C. Protect non-owned vehicular traffic, stored materials, Site, and structures from damage.

1.12 ENCLOSURES AND FENCING

A. Construction: **Contractor's option.**

B. Provide **6**foot high fence around construction Site; equip with vehicular **and pedestrian** gates with locks.

1.13 SECURITY

A. Security Program:
   1. Protect Work on **existing premises** from theft, vandalism, and unauthorized entry.
   2. Initiate program **in coordination with Owner's existing security system** at Project mobilization.
   3. Maintain program throughout construction period until **Owner occupancy**.

B. Personnel Identification:
   1. Provide identification badge for each person authorized to enter premises.
   2. Badge to Include: Personal photograph, name and employer.
   3. Maintain list of accredited persons and submit copy to Owner on request.
   4. Require return of badges at expiration of employment on the Work.

1.14 WATER CONTROL

A. Grade Site to drain. Maintain excavations free of water. Provide, operate, and maintain necessary pumping equipment.

1.15 DUST CONTROL

A. Execute Work by methods that minimize raising dust from construction operations.

B. Provide positive means to prevent airborne dust from dispersing into atmosphere.

1.16 EROSION AND SEDIMENT CONTROL

A. Plan and execute construction by methods to control surface drainage from cuts and fills from borrow and waste disposal areas. Prevent erosion and sedimentation.

B. Minimize surface area of bare soil exposed at one time.

C. Provide temporary measures including berms, dikes, drains, and other devices to prevent water flow.

D. Construct fill and waste areas by selective placement to avoid erosive surface silts and clays.

E. Periodically inspect earthwork to detect evidence of erosion and sedimentation. Promptly apply corrective measures.

1.17 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise from <_____> and noise produced by construction operations.

1.18 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances and pollutants produced by construction operations.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 016300 PRODUCT SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality assurance.

B. Product options.

C. Product substitution procedures.

1.2 QUALITY ASSURANCE

A. Contract is based on products and standards established in Contract Documents without consideration of proposed substitutions.

B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.

C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved in writing by Owner.

1.3 PRODUCT OPTIONS

A. See Section 01600 - Product Requirements.

1.4 PRODUCT SUBSTITUTION PROCEDURES

A. Architect/Engineer and Owner will consider requests for substitutions only within 15 days after date of Owner-Contractor Agreement.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:
   1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
   2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
   3. Reference to Article and Paragraph numbers in Specification Section.
   4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum. Change must be a net credit for product consideration.
   5. Changes required in other Work.
   6. Availability of maintenance service and source of replacement parts as applicable.
   7. Certified test data to show compliance with performance characteristics specified.
   8. Samples when applicable or requested.

9. Other information as necessary to assist Owner evaluation.

D. A request constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for substitution as for specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
   6. Will reimburse Owner for review or redesign services associated with reapproval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:
   1. Submit requests for substitutions on CSI Form 13.1A Substitution Request-After the Bidding/Negotiating Stage.
   2. Submit three copies of Request for Substitution for consideration. Limit each request to one proposed substitution.
   3. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
   4. Substitution must include a credit to the Owner.
   5. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

1.5 INSTALLER SUBSTITUTION PROCEDURES

A. Architect/Engineer will consider requests for substitutions only within 15 days after date of Owner-Contractor Agreement.

B. Document each request with:
   1. Installer's qualifications.
   2. Installer's experience in work similar to that specified.
   3. Other information as necessary to assist Architect/Engineer's evaluation.

C. Substitution Submittal Procedure:
   1. Submit three copies Request for Substitution for consideration. Limit each request to one proposed substitution.
   2. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

SECTION 017000 EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.
B. Starting of systems.
C. Demonstration and instructions.
D. Testing, adjusting, and balancing.
E. Project record documents.
F. Operation and maintenance data.
G. Manual for materials and finishes.
H. Manual for equipment and systems.
I. Spare parts and maintenance products.
J. Product warranties and product bonds.
K. Maintenance service.
L. Examination.
M. Preparation.
N. Execution.
O. Cutting and patching.
P. Protecting installed construction.
Q. Final cleaning.

1.2 CLOSEOUT PROCEDURES

A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
   1. Submit maintenance manuals, Project record documents, digital images of construction photographs and other similar final record data in compliance with this Section.
   2. Complete facility startup, testing, adjusting, balancing of systems and equipment, demonstrations, and instructions to Owner's operating and maintenance personnel as specified in compliance with this Section.
   3. Conduct inspection to establish basis for request that Work is substantially complete. Create comprehensive list (initial punch list) indicating items to be completed or corrected, value of incomplete or nonconforming Work, reason for being incomplete, and date of anticipated completion for each item. Include copy of list with request for Certificate of Substantial Completion.
   4. Obtain and submit releases enabling Owner's full, unrestricted use of Project and access to services and utilities. Include certificate of occupancy, operating certificates, and similar releases from authorities having jurisdiction and utility companies.
   5. Deliver tools, spare parts, extra stocks of material, and similar physical items to Owner.
   6. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools, mockups, and similar elements.
   7. Perform final cleaning according to this Section.

B. Substantial Completion Inspection:
   1. When Contractor considers Work to be substantially complete, submit to Engineer:
      a. Written certificate that Work, or designated portion, is substantially complete.
      b. List of items to be completed or corrected (initial punch list).
   2. Within seven days after receipt of request for Substantial Completion, Engineer will make inspection to determine whether Work or designated portion is substantially complete.
   3. Should Engineer determine that Work is not substantially complete:
      a. Engineer will promptly notify Contractor in writing, stating reasons for its opinion.
      b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Engineer.
      c. Engineer will reinspect Work.
      d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.
   4. When Engineer finds that Work is substantially complete, Engineer will:
      a. Prepare Certificate of Substantial Completion on EJCDC C-625 - Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified and amended by Architect/Engineer and Owner (final punch list).
      b. Submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in Certificate.
   5. After Work is substantially complete, Contractor shall:
      a. Allow Owner occupancy of Project under provisions stated in Certificate of Substantial Completion.
      b. Complete Work listed for completion or correction within 30 working days.
   6. Owner will occupy all of building as specified in Section 01100 - Summary.

C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.
   1. When Contractor considers Work to be complete, submit written certification that:
      a. Contract Documents have been reviewed.
      b. Work has been examined for compliance with Contract Documents.
      c. Work has been completed according to Contract Documents.
      d. Work is completed and ready for final inspection.
   2. Submittals: Submit following:
      a. Final punch list indicating all items have been completed or corrected.
      b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
      c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
      d. Accounting statement for final changes to Contract Sum.
      e. Contractor's affidavit of payment of debts and claims on AIA G706 - Contractor's Affidavit of Payment of Debts and Claims.
      f. Contractor affidavit of release of liens.
      g. Consent of surety to final payment on AIA G707 - Consent of Surety to Final Payment Form.
   3. Perform final cleaning for Contractor-soiled areas according to this Section.

D. Final Completion Inspection:

1. Within seven days after receipt of request for final inspection, Engineer will make inspection to determine whether Work or designated portion is complete.
2. Should Engineer consider Work to be incomplete or defective:
   a. Engineer will promptly notify Contractor in writing, listing incomplete or defective Work.
   b. Contractor shall remedy stated deficiencies and send second written request to Engineer that Work is complete.
   c. Engineer will reinspect Work.
   d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.

1.3 STARTING OF SYSTEMS

A. Coordinate schedule for startup of various equipment and systems.

B. Notify Engineer and Owner seven days prior to startup of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.

H. Submit a written report according to Section 01330 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.4 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate Project equipment and instructed by qualified representative who is knowledgeable about the Project.

C. Video Recordings: Provide high-quality color video recordings of demonstration and instructional sessions. Engage commercial videographer to record sessions. Include classroom instructions, demonstrations, board diagrams, and other visual aids. Include menu navigation.

D. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

E. Use operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

F. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at designated location.

G. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

H. Required instruction time for each item of equipment and system is specified in individual Specification Sections.

1.5 PROJECT RECORD DOCUMENTS

A. Maintain on Site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed Shop Drawings, product data, and Samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates used.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction as follows:
   1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
   2. Include locations of concealed elements of the Work.
   3. Identify depth of buried utility lines and provide dimensions showing distances from permanent facility components that are parallel to utilities.
   4. Dimension ends, corners, and junctions of buried utilities to permanent facility components using triangulation.
   5. Identify and locate existing buried or concealed items encountered during Project.
   6. Measured depths of foundations in relation to finish [first] [main] floor datum.
   7. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   8. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

9. Field changes of dimension and detail.
10. Details not on original Drawings.

G. Submit marked-up paper copy documents to Engineer before Substantial Completion.

H. Submit PDF electronic files of marked-up documents to Engineer before Substantial Completion.

1.6 OPERATION AND MAINTENANCE DATA

A. Submit in PDF composite electronic indexed file.

B. Submit data bound in 8-1/2 x 11-inch text pages, three D side ring binders with durable plastic covers.

C. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS," title of Project.

D. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

E. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

F. Contents: Prepare table of contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Include the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
      g. Safety precautions to be taken when operating and maintaining or working near equipment.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop Drawings and product data.
      b. Air and water balance reports.
      c. Certificates.
      d. Photocopies of warranties and bonds.

1.7 MANUAL FOR MATERIALS AND FINISHES

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes before Substantial Completion. Draft copy be reviewed and returned after Substantial Completion, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit two sets of revised final volumes within ten days after final inspection.

E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom-manufactured products.

F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

H. Additional Requirements: As specified in individual product Specification Sections.

I. Include listing in table of contents for design data, with tabbed fly sheet and space for insertion of data.

1.8 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes before Substantial Completion. Draft copy will be reviewed and returned after Substantial Completion, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit two sets of revised final volumes within ten days after final inspection.

E. Each Item of Equipment and Each System: Include description of unit or system and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

F. Include color-coded wiring diagrams as installed.

G. Operating Procedures: Include startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter, and special operating instructions.

H. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

I. Include servicing and lubrication schedule and list of lubricants required.

J. Include manufacturer's printed operation and maintenance instructions.

K. Include sequence of operation by controls manufacturer.

L. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

M. Include control diagrams by controls manufacturer as installed.

N. Include Contractor's coordination drawings with color-coded piping diagrams as installed.

O. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

P. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

Q. Include test and balancing reports as specified in Section 01400 - Quality Requirements.

R. Additional Requirements: As specified in individual product Specification Sections.

S. Include listing in table of contents for design data with tabbed dividers and space for insertion of data.

1.9 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.

B. Deliver to Project Site and place in location as directed by Owner ; obtain receipt prior to final payment.

1.10 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible Subcontractors, suppliers, and manufacturers within ten days after completion of applicable item of Work.

B. Execute and assemble transferable warranty documents and bonds from Subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include table of contents and assemble in three D side ring binder with durable plastic cover.

F. Submit prior to final Application for Payment.

G. Time of Submittals:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
   2. Make other submittals within ten days after date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.11 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in Specification Sections during warranty period.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual Specification Sections.

D. Verify that utility services are available with correct characteristics and in correct locations.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer-required or -recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.3 EXECUTION

A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.

B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.

D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
   1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
   2. Physically separate products in place, provide electrical insulation, or provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
   3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual-effect choices to Architect/Engineer for final decision.

E. Allow for expansion of materials and building movement.

F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.
   1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
   2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.

G. Mounting Heights: Where not indicated, mount individual units of Work at industry recognized standard mounting heights for particular application indicated.
   1. Refer questionable mounting heights choices to Architect/Engineer for final decision.
   2. Elements Identified as Accessible to Handicapped: Comply with applicable codes and regulations.

H. Adjust operating products and equipment to ensure smooth and unhindered operation.

I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

3.4 CUTTING AND PATCHING

A. Employ skilled and experienced installers to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting:
   1. Structural integrity of element.
   2. Integrity of weather-exposed or moisture-resistant elements.
   3. Efficiency, maintenance, or safety of element.
   4. Visual qualities of sight-exposed elements.
   5. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching including excavation and fill to complete Work and to:
   1. Fit the several parts together, to integrate with other Work.
   2. Uncover Work to install or correct ill-timed Work.
   3. Remove and replace defective and nonconforming Work.
   4. Remove samples of installed Work for testing.
   5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new products according to requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with fire-rated material, to full thickness of penetrated element.

J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

K. Identify hazardous substances or conditions exposed during the Work to Architect/Engineer for decision or remedy.

3.5 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual Specification Sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate Work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Use durable sheet materials to protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

3.6 FINAL CLEANING

A. Execute final cleaning prior to final Project assessment.
   1. Employ experienced personnel or professional cleaning firm.

B. Clean equipment and fixtures to sanitary condition with appropriate cleaning materials.

C. Replace filters of operating equipment.

D. Clean debris from roofs, gutters, downspouts, and drainage systems.

E. Clean Site; sweep paved areas, rake clean landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from Site.

END OF SECTION

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.3 PROJECT INFORMATION

A. Facility Owner Information:

1. Owner Name: McAllen ISD.
2. Owner's Representative:
    a. Ruben Trevino; Executive Director of Facilities, Maintenance & Operations; McAllen ISD
    b. Melissa Rodriguez; Facilities Project Manager; McAllen ISD (956) 632-3200
3. Owner's Engineer:
    a. Engineer: Oscar Lopez, PE; Chanin Engineering; 956-687-9421
    b. Direct technical questions to Owner's Engineer.
    c. Where individual specification sections refer to Owner, Owner may elect to delegate submittal and response responsibilities to Owner's Consultant.

B. Facility Information:

1. Facility Name: Rowe High School.
   a. Building Location: 2101 N. Ware Rd., McAllen, Texas

2. Facility Name: McAllen High School
   a. Building Location: 2021 La Vista Ave., McAllen, Texas

3. Facility Name: Memorial High School
   a. Building Location: 101 E. Hackberry Ave., McAllen, Texas

C. Project Information:

1. Project Name: MCALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE II FOR MEMORIAL, MCALLEN, JAMES "NIKKI: ROWE HIGH SCHOOLS

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Replacement of Dimmer Racks and replacement/renovation of lighting systems for Memorial, McAllen, and James "NIKKI Rowe" High Schools - McAllen Independent School District

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 ACCESS TO SITE

A. Use of Site, Limited: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

1. Use of Site: Limit use of Project site to work in areas indicated and as directed by Owner. Do not disturb portions of Project site beyond areas in which the Work is indicated, including designated lay-down areas.

   a. Do not use Owner's toilet rooms.

   b. Do not use Owner's cafeteria.

2. Driveways, Walkways and Entrances: Keep driveways, facility loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

   a. Schedule deliveries to minimize use of driveways and entrances by construction operations.

b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

A. Owner Occupancy: Owner will occupy site including existing and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.

2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to after normal business working hours of 6:00 p.m. to 6:00 a.m., Monday through Friday, unless otherwise indicated.

1. Weekend Hours: 24 hour notice to Owner.

2. Hours for Utility or Services Shutdowns: 24 Hour notice to Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.

2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Nonsmoking Project: Use of tobacco products on the Project site is not permitted.

F. Controlled Substances: Use of other controlled substances on the Project site is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Quantity allowances.

2. Contingency allowances.

C. Related Requirements:

1. Section 012200 "Unit Prices" for procedures for using unit prices.

2. Divisions 2 through 48 Sections for items of work covered by allowances.

1.3 ACTION SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.4 INFORMATIONAL SUBMITTALS

A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.

2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No 1: $15,000.00 contingency for use according to Owner's written instructions.

END OF SECTION 01210

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012100 "Allowances" for quantity allowances to be adjusted based upon Unit Prices.

1.3 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

END OF SECTION 012200

SECTION 01 29 00 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
   1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
      a. Application for Payment forms with Continuation Sheets.
      b. Contractor's Construction Schedule.
   2. Submit the Schedule of Values to Owner at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
   1. Identification: Include the following Project identification on the Schedule of Values:
      a. Project name and location.
      b. Contractor's name and address.
      c. Date of submittal.
   2. Submit draft of AIA Document G703 Continuation Sheets Owner's payment form included in the Project Manual.
   3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
   4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Schedule Updating: Include each Change Order as a new line item on the subsequent Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as paid for by Owner.
   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included at end of this Section.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner will return incomplete applications without action.
   1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
   2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
   1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
   1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
   2. When an application shows completion of an item, submit final or full waivers.
   3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
   4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. Schedule of Values.
   2. Contractor's Construction Schedule.
   3. Products list.
   4. Schedule of unit prices.
   5. Copies of building permits.
   6. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
   7. Initial progress report.
   8. Report of preconstruction conference.
   9. Certificates of insurance and insurance policies.
   10. Performance and payment bonds.

I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
   1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
   2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   3. Updated final statement, accounting for final changes to the Contract Sum.
   4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   6. Evidence that claims have been settled.
   7. Final, liquidated damages settlement statement.

END OF SECTION 01 29 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:
   1. Division 1 Section "Allowances" for testing and inspecting allowances.
   2. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where

indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.

D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
   1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
   1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
   2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
   1. Contractor responsibilities include the following:
      a. Provide test specimens representative of proposed products and construction.
      b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
      c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
      d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
      e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
      f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect and/or roof consultant.
2. Notify Architect and/or roof consultant seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's and/or roof consultant approval of mockups before starting work, fabrication, or construction.
   a. Allow seven days for initial review and each re-review of each mockup.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."

D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect, roof consultant and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect, roof consultant and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 10 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to Owner, Architect, roof consultant, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect, roof consultant and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect and/or roof consultant with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, this includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

A. To be determined by the Owner, roof consultant, and/or Architect

3.2 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to owner, roof consultant and/or Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for owner, roof consultant, and/or Architect's reference during normal working hours.

3.3 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
   1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
   2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.

B. Related Sections include the following:
   1. Division 1 Section "Allowances" for products selected under an allowance.
   2. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
   3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

A. Product List: Submit a list, in tabular from, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
   1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
   2. Form: Tabulate information for each product under the following column headings:
      a. Specification Section number and title.
      b. Generic name used in the Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.
      h. Identification of items that require early submittal approval for scheduled delivery date.
   3. Initial Submittal: Within 10 days after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
      a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
   4. Completed List: Within 20 days after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
   5. Architect's Action: Architect will respond in writing to Contractor within 15 days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Substitution Request Form: Use CSI Form 13.1A.
   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
      a. Statement indicating why specified material or product cannot be provided.
      b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
      c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
      d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
      e. Samples, where applicable or requested.
      f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
j. Cost information, including a proposal of change, if any, in the Contract Sum.
k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
   1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
      a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
      b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
   1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
   2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect and roofing consultant will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
   1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:
   1. Store products to allow for inspection and measurement of quantity or counting of units.
   2. Store materials in a manner that will not endanger Project structure.
   3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
   4. Store cementitious products and materials on elevated platforms.
   5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
   6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
   7. Protect stored products from damage and liquids from freezing.
   8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
   1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.

2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the

specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.

8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
    a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
    a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
    b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 10 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
    1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    2. Requested substitution does not require extensive revisions to the Contract Documents.
    3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    4. Substitution request is fully documented and properly submitted.
    5. Requested substitution will not adversely affect Contractor's Construction Schedule.
    6. Requested substitution has received necessary approvals of authorities having jurisdiction.
    7. Requested substitution is compatible with other portions of the Work.
    8. Requested substitution has been coordinated with other portions of the Work.

9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

A. Conditions: Architect and roof consultant will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
   1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
   2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
   3. Evidence that proposed product provides specified warranty.
   4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
   5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 09 91 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes surface preparation and the application of paint systems on interior substrates.

1. Concrete.
2. Concrete masonry units (CMUs).
3. Steel and iron.
4. Galvanized metal.
5. Copper.
6. Wood.
7. Gypsum board.
8. Plaster.
9. Acoustic panels and tiles.
10. Spray-textured ceilings.

B. Section includes surface preparation and the application of paint systems on exterior substrates.

1. Concrete.
2. Fiber-cement board.
3. Clay masonry.
4. Concrete masonry units (CMUs).
5. Steel and iron.
6. Galvanized metal.
7. Aluminum (not anodized or otherwise coated).
8. Copper.
9. Stainless steel.
10. Wood.
11. Fiberglass.
12. Plastic.
13. Portland cement plaster (stucco).
14. Gypsum board.
15. Cotton or canvas insulation covering.
16. Bituminous-coated surfaces.

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C. Related Requirements:

1. Section 05 12 00 "Structural Steel Framing" for shop priming structural steel.

2. Section 05 12 13 "Architecturally Exposed Structural Steel Framing" for shop priming of metal substrates.

3.
4. Section 05 50 00 "Metal Fabrications" for shop priming metal fabrications.
5. Section 05 51 13 "Metal Pan Stairs" for shop priming metal pan stairs.
6. Section 05 51 16 "Metal Floor Plate Stairs" for shop priming metal floor plate stairs.
7. Section 05 51 19 "Metal Grating Stairs" for shop priming metal grating stairs.
8. Section 05 52 13 "Pipe and Tube Railings" for shop priming and painting pipe and tube railings.
9. Section 09 96 00 "High-Performance Coatings" for tile-like coatings.
10. Section 09 93 00 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on interior wood substrates.

1.3 DEFINITIONS

A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. Indicate VOC content.

B. Sustainable Design Submittals:

1. Product Data: For paints and coatings, indicating VOC content.

2. Laboratory Test Reports: For paints and coatings, indicating compliance with requirements for low-emitting materials.

C. Samples for Initial Selection: For each type of topcoat product.

D. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.

3. Label each coat of each Sample.
4. Label each Sample for location and application area.

E. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. of each material and color applied.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Sherwin-Williams Company (The).

B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

B. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

C. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings shall comply with VOC content limits of authorities having jurisdiction and the following VOC content limits:

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Shellacs, Clear: 730 g/L.
9. Shellacs, Pigmented: 550 g/L.

D. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

E. Colors: As selected by Architect from manufacturer's full range, and as indicated in a color schedule.

2.3 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Fiber-Cement Board: 12 percent.
3. Masonry (Clay and CMUs): 12 percent.
4. Wood: 15 percent.
5. Gypsum Board: 12 percent.
6. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Plaster Substrates: Verify that plaster is fully cured.

E. Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

F. Portland Cement Plaster Substrates: Verify that plaster is fully cured.

G. Exterior Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

H. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

I. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:

1. SSPC-SP 2.
2. SSPC-SP 3.
3. SSPC-SP 7/NACE No. 4.
4. SSPC-SP 11.
5. SSPC-SP 15.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Aluminum Substrates: Remove loose surface oxidation.

J. Wood Substrates (Interior):

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

K. Wood Substrates (Exterior):

1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

L. Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

M. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:

    a. Equipment, including panelboards and switch gear.
    b. Uninsulated metal piping.
    c. Uninsulated plastic piping.
    d. Pipe hangers and supports.
    e. Metal conduit.
    f. Plastic conduit.
    g. Tanks that do not have factory-applied final finishes.
    h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    i. Refer to respective trade specification sections for additional items to be painted.

2. Paint the following work where exposed in occupied spaces:

    a. Equipment, including panelboards.
    b. Uninsulated metal piping.
    c. Uninsulated plastic piping.
    d. Pipe hangers and supports.
    e. Metal conduit.
    f. Plastic conduit.

g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
h. Other items as directed by Architect.
i. Refer to respective trade specification sections for additional items to be painted.

3. Paint the following work where exposed to view:

a. Equipment, including panelboards and switch gear.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.

4. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. High-Performance Architectural Latex System MPI INT 3.1C-G3:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45w00151.

B. Concrete Substrates, Traffic Surfaces:

1. Solvent-Based Concrete Floor Sealer System MPI INT 3.2F:

a. First Coat: Sealer, solvent based, for concrete floors, matching topcoat.
b. Topcoat: Sealer, solvent based, for concrete floors, MPI #104.

1) Sherwin-Williams; H&C, H&C Decorative Concrete Sealer – 50.00000.

C. Cement Board Substrates:

1. Latex System MPI INT 3.3A:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.

1) Sherwin-Williams; ProMar 200 Zero VOC, Interior Latex Eg-Shel.

D. Clay Masonry Substrates:

1. High-Performance Architectural Latex System MPI INT 4.1L-G3:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45w00151.

E. CMU Substrates:

1. High-Performance Architectural Latex System MPI INT 4.2D-G3:

a. Block Filler: Block filler, latex, interior/exterior, MPI #4.
   1) Sherwin Williams; Loxon, Block Surfacer -A24W00200/A24WQ8200.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.

   1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45w00151.

2. Clear (2-Component) Polyurethane System MPI INT 4.2Q:

   a. Prime Coat: Two-component polyurethane, matching topcoat.
   b. Intermediate Coat: Two-component polyurethane, matching topcoat.
   c. Topcoat: Varnish, aliphatic polyurethane, two component (MPI Gloss Level 6), MPI #78.

      1) Sherwin-Williams; Protective & Marine Coatings, Hi-Solids Polyurethane – B65-350.

F. Steel Substrates (Structural Steel and Metal Fabrications):

1. Latex System, Alkyd Primer MPI INT 5.1QQ-G5:

   a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, MPI #79.

      1) Sherwin-Williams; Protective & Marine, Steel Spec Universal Metal Primer – B50WV8430.
   b. Intermediate Coat: Latex, interior, matching topcoat.

   c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

      1) Sherwin-Williams; Harmony, Interior Latex Semi-Gloss – B10W01051.

G. Galvanized-Metal Substrates: High Contact/High Traffic Areas; Doors, Frames, Railings, Pipes, Etc., and Low Contact/Low Traffic Areas; Over-Head Decking, Pipes, Ducts, Etc.

1. Epoxy System MPI INT 5.3D-G5 (Doors:

   a. Prime Coat: Primer, epoxy, anti-corrosive, for metal, MPI #101.

      1) Sherwin-Williams; Protective & Marine, Dura-Plate 235 Multi-Purpose Epoxy – B67W235/B67V235.

   b. Intermediate Coat: Epoxy, semi-gloss, matching topcoat.
   c. Topcoat: Epoxy, semi-gloss (MPI Gloss Level 5), MPI #177.

      1) Sherwin-Williams; Protective & Marine, Macropoxy 646 Fast Cure Epoxy – B58W00610.

H. Aluminum (Not Anodized or Otherwise Coated) Substrates:

1. Latex System MPI INT 5.4H:

a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.

1) Rust-Oleum; XIM X Seal - 11301.

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.

1) Sherwin-Williams; ProMar 200 Zero VOC, Interior Latex Eg-Shel – B20W12651.

I. Copper Substrates:

1. High-Performance Architectural Latex System MPI INT 5.5F-G5:

a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.

1) Rust-Oleum; XIM X Seal - 11301.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45W00151.

J. Plastic Substrates:

1. High-Performance Architectural Latex System MPI INT 6.8AA-G5:

a. Prime Coat: Primer, bonding, water based, MPI #17.

1) Sherwin-Williams; Extreme Bond, Interior/Exterior Bonding Primer – B51W00150.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural, semi-gloss (MPI Gloss Level 5), MPI #141.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45W00151.

K. Spray-Textured Ceiling Substrates:

1. Latex over Alkyd Sealer System MPI INT 9.1B-G3:

a. Prime Coat: Primer sealer, alkyd, interior, MPI #45.

1) Sherwin-Williams; ProBlock, Interior Oil-Based Primer – B79W08810.

b. Topcoat: Latex, interior (MPI Gloss Level 3), MPI #52.

1) Sherwin-Williams; ProMar 200 Zero VOC, Interior Latex Eg-Shel – B20W12651.

L. Gypsum Board and Plaster Substrates:

1. High-Performance Architectural Latex System MPI INT 9.2B-G3:

a. Prime Coat: Primer sealer, latex, interior, MPI #50.

1) Sherwin-Williams; Harmony, Interior latex Primer – B11W01500.

b. Intermediate Coat: Latex, interior, high performance architectural, matching topcoat.

c. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45W00151.

M. Acoustic Panels and Tiles:

1. High-Performance Architectural Latex System MPI INT 9.3E-G3:

a. Prime Coat: Latex, interior, high performance architectural, matching topcoat.

b. Topcoat: Latex, interior, high performance architectural (MPI Gloss Level 3), MPI #139.

1) Sherwin-Williams; Pro Industrial, Pre-Catalyzed Waterbased Epoxy Eg-Shel – K45W00151.

N. Cotton or Canvas and ASJ Insulation-Covering Substrates: Including pipe and duct coverings.

1. Alkyd System MPI INT 10.1B-G3:

a. Prime Coat: Primer sealer, latex, interior, MPI #50.

1) Sherwin-Williams; Quick Dry Stainblocking, Interior/Exterior Latex Primer – B51W08670.

b. Intermediate Coat: Alkyd, interior, matching topcoat.

c. Topcoat: Alkyd, interior, semi-gloss (MPI Gloss Level 5), MPI #47.

1) Sherwin-Williams; ProMar 200, Alkyd Semi-Gloss – B34W00251.

O. Bituminous-Coated Substrates:

1. Alkyd System MPI INT 10.2B-G5:

a. Prime Coat: Primer, rust inhibitive, water based, MPI #107.

1) Sherwin-Williams; Pro Industrial, Pro-Cryl Universal Primer – B66W310.

b. Intermediate Coat: Alkyd, interior, matching topcoat.

c. Topcoat: Alkyd, interior, semi-gloss (MPI Gloss Level 5), MPI #47.

1) Sherwin-Williams; ProMar 200, Alkyd Semi-Gloss – B34W00251.

P. Steel High-Heat Substrates: Boilers, Furnaces, Heat Exchangers, Breeching, Pipes, Flues, Stacks, Etc.

1. High Performance Silicone Acrylic System MPI INT 5.2A-G6:

a. Prime Coat: High performance, low-VOC, high solids, silicone acrylic, heat resistant flat, MPI #.

1) Sherwin-Williams; Protective & Marine Coatings, KEM Hi-Temp, Heat-Flex II 450 – B59-300.

b. Intermediate Coat: Alkyd, interior, matching topcoat.

a. Topcoat: High performance, low-VOC, high solids, silicone acrylic, heat resistant gloss, MPI #.

1) Sherwin-Williams; Protective & Marine Coatings, KEM Hi-Temp, Heat-Flex II 450 – B59-300/B59V405.

3.7 EXTERIOR PAINTING SCHEDULE

A. Asphalt Surfaces:

1. Latex Zone/Traffic Marking System MPI EXT 2.1A-NA:

a. Topcoat: Latex, exterior, low sheen (MPI Gloss Level NA), MPI #97.

1) Sherwin-Williams; Pro-Park, Waterborne Traffic Marking Paint, Black – B97BD2021.

2) Sherwin-Williams; Pro-Park, Waterborne Traffic Marking Paint, Blue – B97LD2022.

3) Sherwin-Williams; Pro-Park, Waterborne Traffic Marking Paint, Red – B97RD2012.

4) Sherwin-Williams; Pro-Park, Waterborne Traffic Marking Paint, White – B97WD2434.

5) Sherwin-Williams; Pro-Park, Waterborne Traffic Marking Paint, Yellow – B97YD2467.

2. Latex Zone/Traffic Marking System MPI EXT 2.1A-NA:

a. Topcoat: Latex, exterior, low sheen (MPI Gloss Level NA), MPI #97.

1) Sherwin-Williams; Protective & Marine Coatings, Setfast Acrylic Waterborne Traffic Marking Paint, Black – TM227/TM226.

B. Concrete Substrates, Nontraffic Surfaces:

1. Latex System MPI EXT 3.1A-G3:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

1) Sherwin-Williams; DuraCraft, Exterior Acrylic Latex Satin – C07W00251.

C. Concrete Substrates, Traffic Surfaces:

1. Epoxy Deck Coating, Slip Resistant System MPI EXT 3.2C-NA:

a. Topcoat: Floor paint, latex, low gloss (maximum MPI Gloss Level 1), MPI #82.

1) Sherwin-Williams; American Safety, Two Component Anti-Slip Epoxy – AST-250.

D. Cement Board Substrates:

1. Latex System MPI EXT 3.3J-G3:

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

1) Sherwin-Williams; DuraCraft, Exterior Acrylic Latex Satin – C07W00251.

E. Clay Masonry Substrates:

1. Latex System MPI EXT 4.1A – G3/4 (Opaque-Color):

a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

1) Sherwin-Williams; DuraCraft, Exterior Acrylic Latex Satin – C07W00251.

2. Water Repellent (paintable) MPI EXT 4.1G – NA (Clear – No Gloss):

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: Textured coating, latex, nonflat, MPI #34.

        1) Rust-Oleum; OKON S 40, Heavy Duty Penetrating Water Repellent Sealer – OK640/41/45.

F. CMU Substrates (Standard & Light Weight):

1. High Performance Architectural Latex System MPI EXT 4.2M – G3/4 (Opaque-Color):

    a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

        1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

    b. Intermediate Coat: Latex, exterior, matching topcoat.

    c. Topcoat: Latex, exterior, high performance architectural, low sheen (MPI Gloss Level 3-4), MPI #315.

        1) Benjamin Moore; Aura, Exterior Low Lustre - 634.

2. Water Repellent (paintable) MPI EXT 4.2J – NA (Clear – No Gloss):

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: Textured coating, latex, nonflat, MPI #34.

        1) Rust-Oleum; OKON S 40, Heavy Duty Penetrating Water Repellent Sealer – OK640/41/45.

G. CMU Substrates (Profiled Blocks & Split-Face):

1. High Performance Architectural Latex System MPI EXT 4.2M – G3/4 (Opaque-Color):

    a. Prime Coat: Primer, alkali resistant, water based, MPI #3.

        1) Sherwin-Williams; Loxon, Loxon Concrete & Masonry Primer – A24W8300.

    b. Intermediate Coat: Latex, exterior, matching topcoat.

    c. Topcoat: Latex, exterior, high performance architectural, low sheen (MPI Gloss Level 3-4), MPI #315.

        1) Benjamin Moore; Aura, Exterior Low Lustre - 634.

2. Water Repellent (paintable) MPI EXT 4.2J – NA (Clear – No Gloss):

    a. Prime Coat: As recommended in writing by topcoat manufacturer.
    b. Intermediate Coat: As recommended in writing by topcoat manufacturer.
    c. Topcoat: Textured coating, latex, nonflat, MPI #34.

1) Rust-Oleum; OKON S 40, Heavy Duty Penetrating Water Repellent Sealer – OK640/41/45.

H. Steel and Iron Substrates:

1. Water-Based Light Industrial Coating System MPI EXT 5.1C:

a. Prime Coat: Primer, alkyd, anti-corrosive for metal, MPI #79.

1) Sherwin-Williams; Protective & Marine Coatings, Steel Spec Universal Metal Primer – B50WV8430.

b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.

c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5), MPI #163.

1) Sherwin-Williams; All Surface Enamel, All Surface Enamel HP Semi-Gloss - A41WQ8051.

I. Galvanized-Metal Substrates:

1. Epoxy System MPI EXT 5.3C:

a. Prime Coat: Primer, epoxy, anti-corrosive, for metal, MPI #101.

1) Sherwin-Williams; Protective & Marine, Dura-Plate 235 Multi-Purpose Epoxy – B67W235/B67V235.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Epoxy, semi-gloss, exterior, flat (MPI Gloss Level 5), MPI #177.

1) Sherwin-Williams; Protective & Marine, Macropoxy 646 Fast Cure Epoxy – B58W00610.

J. Aluminum Substrates:

1. Water-Based Light Industrial Coating System MPI EXT 5.4G:

a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.

1) Rust-Oleum; XIM, X Seal - 11301.

b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.

c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5), MPI #163.

1) Sherwin-Williams; All Surface Enamel, All Surface Enamel HP Semi-Gloss – A41WQ8051.

K. Copper Substrates:

1. Water-Based Light Industrial Coating System MPI EXT 5.5G:

a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.

1) Rust-Oleum; XIM, X Seal - 11301.

b. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.

c. Topcoat: Light industrial coating, exterior, water based, semi-gloss (MPI Gloss Level 5), MPI #163.

1) Sherwin-Williams; All Surface Enamel, All Surface Enamel HP Semi-Gloss – A41WQ8051.

L. Wood Substrates: Glued-laminated construction.

1. Polyurethane, Clear, 2 Component (over s.b. stain) MPI EXT 6.1E:

a. Prime Coat: Stain, exterior, solvent based, semi-transparent, MPI #13.

1) Benjamin Moore; Premium Exterior Stain Alkyd Semi-Transparent Deck & Siding – C328/K328.

b. Intermediate Coat: Varnish, aliphatic polyurethane, two-component, matching topcoat.

c. Topcoat (2 Coats): Varnish, aliphatic polyurethane, two-component, gloss (MPI Gloss Level 6), MPI #78.

1) Benjamin Moore; Corotech, Acrylic Aliphatic Polyurethane – V500.

M. Wood Substrates: Exposed framing.

1. Latex over Alkyd Primer System MPI EXT 6.2A:

a. Prime Coat: Primer, alkyd/oil for exterior wood, MPI #5.

1) Sherwin-Williams; A-100, Ext Fast Dry Stain Blocking Alkyd Primer – Y24WB8005.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

1) Sherwin-Williams; DuraCraft, Exterior Acrylic Latex Satin - C07W00251.

N. Portland Cement Plaster Substrates:

1. Latex System MPI EXT 9.1A:

a. Prime Coat: Latex, exterior, matching topcoat.

b. Intermediate Coat: Latex, exterior, matching topcoat.

c. Topcoat: Latex, exterior, low sheen (MPI Gloss Level 3-4), MPI #15.

1) Sherwin-Williams; DuraCraft, Exterior Acrylic Latex Satin - C07W00251.

END OF SECTION 09 91 00

MCALLEN INDEPENDENT SCHOOL DISTRICT
FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE 2
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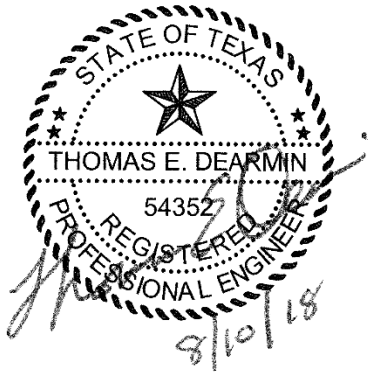

DIVISION 26 – ELECTRICAL

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26 05 19	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
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PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. The General Provisions, Supplemental General Provisions, Special Provisions, Division 1 Specification Sections and all relevant documents shall form a part of this Division of the Specifications, and shall be incorporated in this Section and each Division 26 Section hereinafter as if repeated verbatim herein. All conditions imposed by these documents shall be applicable to all portions of the work under this Division. Certain specific paragraphs of said references may be referred to hereinafter in this Division. These references are intended to point out specific items to the Contractor, but in no way relieve him of the responsibility of reading and complying with all relevant parts of the entire Specification.

B. The Contractor shall examine and coordinate with all Contract Drawings and Specifications, and all Addenda issued. Failure to comply shall not relieve him of responsibility. The omission of details of other portions of the work from this Division shall not be used as a basis for a request for additional compensation.

C. The specific features and details for other portions of the work related to the construction in progress or to the existing building(s) shall be determined by examination at the site.

1.02 SCOPE OF WORK

A. The requirements contained in this Section apply to all work performed under Division 26 of these Specifications.

B. The work covered by this Division of the Specifications comprises the furnishing of labor, material, equipment, transportation, tools and services, and performing operations required for, and reasonably incidental to, the installation of the work in accordance with the applicable Contract Documents, and subject to the terms and conditions of the Contract.

C. Refer to other Divisions of the Specifications for related work.

1.03 DEFINITION OF "CONTRACTOR"

A. Where the word "Contractor" is used under any Section of this Division of the Specifications, it shall mean the Contractor engaged to execute the work included under that Section.

1.04 RESPONSIBILITY OF THE CONTRACTOR

A. The Contractor shall be responsible for all work of every description in connection with this Division of the Specifications. The Contractor shall specifically and distinctly assume, and does so assume, all risk for damage or injury from whatever cause to property or person used or employed on or in connection with this work and of all damages or injury to any person or property wherever located, resulting from an action or operation under the Contract in connection with the work, and undertake the responsibility to defend the Owner against all claims on account of any such damage or injury.

B. The Contractor will be held responsible for the satisfactory execution and completion of the work in accordance with the true intent of the Contract Documents. The Contractor shall provide without extra charge all incidental items required as part of the work, even though it may not be specifically indicated. If the Contractor has reason for objecting to the use of any material, equipment, device or method of construction as indicated, he shall make report of such objections to the Owner's Representative, obtain proper approval and adjustment to the Contract, and shall proceed with the work.

1.05 TERMINOLOGY

A. Whenever the words "furnish", "provide", "furnish and install", "provide and install", and similar phrases occur, it is the intent that the materials, equipment and devices described be furnished, installed and connected under this Division, complete for operation, unless specifically noted to the contrary.
B. It is also the intent, unless specifically noted to the contrary, that all materials, equipment and devices described and specified under this Division of the Specifications be similarly furnished, installed and connected under this Division, whether or not a phrase as described in the preceding paragraph has been actually included.

1.06 ORDINANCES, PERMITS AND CODES

A. It shall be the Contractor's duty to perform the work and provide the materials covered by these specifications in conformance with all ordinances and regulations of all authorities having jurisdiction.
B. All work herein shall conform to all applicable laws, ordinances and regulations of the local utility companies.
C. The Contractor shall obtain and pay for all permit and connection fees as required for the complete installation of the specified systems, equipment, devices and materials.
D. The Contractor shall obtain permits, plan checks, inspections and approvals applicable to the work as required by the regulatory authorities. Fees and costs of any nature whatsoever incidental to these permits, inspections and approvals shall be assumed and paid by the Contractor. The pro-rata costs, if any, for utilities serving this property will be paid for by the Owner and shall not be included as part of this Contract.
E. The work shall be in accordance with, but shall not be limited to, the requirements of:
    1. National Fire Protection Association
    2. National Electrical Code
    3. National Safety Code
    4. State of Texas Safety Code
    5. City of McAllen Building Codes
    6. State of Texas Building Codes
F. Codes and standards referred to are minimum standards. Where the requirements of the Drawings or Specifications exceed those of the codes and regulations, the Drawings and Specifications govern.

1.07 MATERIALS, EQUIPMENT AND DEVICE DESCRIPTION

A. Materials, equipment and devices shall be of the best quality customarily applied in quality commercial practice, and shall be the products of reputable manufacturers. Each major component shall bear a nameplate giving the name and address of the manufacturer, and the catalog number or designation of the component.
B. Materials, equipment and devices furnished under this Division of the Specifications shall be essentially the standard product of the specified manufacturer, or where allowed, an alternate manufacturer. Where two or more units of the same kind or class of a specific item are required, these shall be the products of a single manufacturer; however, the component parts of the item need not be the products of one manufacturer.
C. In describing the various materials, equipment and devices, in general each item will be described singularly, even though there may be a multiplicity of identical items. Also, where the description is only general in nature, exact sizes, duties, space arrangements, horsepower requirements and other data shall be determined by reference to the Contract Documents.

D. Space allocations for materials, equipment and devices have been made on the basis of present and known future requirements and the dimensions of items of equipment or devices of a particular manufacturer whether indicated or not. The Contractor shall verify that all materials, equipment and devices proposed for use on this project are within the constraints of the allocated space.

1.08 QUALITY ASSURANCE

A. Materials, equipment and devices shall be new and of the quality specified, and shall be free from defects at the time of installation. Materials, equipment and devices damaged in shipment or otherwise damaged or found defective prior to acceptance by the Owner shall not be repaired at the job site, but shall be replaced with new materials, equipment or devices identical with those damaged, unless specifically approved otherwise by the Owner's Representative.

B. Wherever a UL standard has been established for a particular type of material, equipment or device, each item of such material, equipment or device provided on this project shall meet the requirements of the UL standard in every way, and shall be UL listed and labeled.

1.09 REFERENCE STANDARDS

A. Materials, equipment, devices and workmanship shall comply with applicable local, county, state and national codes, laws and ordinances, utility company regulations and industry standards.

B. In case of differences between building codes, state laws, local ordinances, industry standards, utility company regulations and the Contract Documents, the most stringent shall govern. The Contractor shall promptly notify the Owner's Representative in writing of any such difference. Should the Contractor perform any work that does not comply with local codes, laws and ordinances, industry standards or other governing regulations, the work shall be corrected of noncompliance deficiencies with the Contractor bearing all costs.

C. In addition to the aforementioned ordinances, industry standards published by the following organizations shall apply:

AABM	-	American Association of Battery Manufacturers
AIA	-	American Institute of Architects
ANSI	-	American National Standards Institute
ASTM	-	American Society for Testing and Materials
CBM	-	Certified Ballast Manufacturers Association
ETL	-	Electrical Testing Laboratories
FM	-	Factory Mutual
ICEA	-	Insulated Cable Engineers Associated
IEEE	-	Institute of Electrical and Electronic Engineers
IES	-	Illuminating Engineering Society
IRI	-	Industrial Risk Insurance
NBS	-	National Bureau of Standards
NEC	-	National Electrical Code
NECA	-	National Electrical Contractors Association
NEMA	-	National Electrical Manufacturers Association
NESC	-	National Electrical Safety Code
NETA	-	National Electrical Testing Association
NFPA	-	National Fire Protection Association
UL	-	Underwriters Laboratories

D. Where the Contract Documents exceed the above requirements, the Contract Documents shall govern. In no case shall work be installed contrary to or below the minimum legal standards.

1.10 DRAWINGS AND SPECIFICATIONS

A. The interrelation of the Drawings (including the schedules) and the Specifications are as follows:
   1. The Drawings establish quantities, locations, dimensions and details of materials, equipment and devices. The schedules on the Drawings indicate the capacities, characteristics and components.
   2. The Specifications provide written requirements for the quality, standard and nature of the materials, equipment, devices and construction systems.

B. The Drawings and Specifications shall be considered as being compatible; therefore, the work called for by one and not by the other shall be furnished and installed as though called for by both. Resolution of conflicts between Drawings and Specifications shall be as follows:
   1. If the Drawings and Specifications disagree in themselves, or with each other, the Contractor's pricing shall be based on furnishing and installing the most expensive combination of quality and quantity of work indicated. In the event of this type of disagreement, the resolution shall be determined by the Engineer.
   2. The Contractor shall be responsible for bringing any conflicts in the Drawings and the Specifications to the attention of the Engineer prior to any work being performed.
   3. In general, if there is conflict between the Drawings and Specifications, the Drawings shall govern the Specifications.
   4. Where the Specifications do not fully agree with schedules on the Drawings, the schedules shall govern. Actual numerical dimensions indicated on the Drawings govern scale measurements and large scale details govern small scale drawings.
   5. Materials, equipment and devices called for on the Drawings and not indicated herein, shall be completely provided and installed as though it were fully described herein.
   6. Materials, equipment and devices called for herein shall be completely provided and installed, whether or not it is fully detailed, scheduled or indicated on the Drawings.

C. The Contractor shall examine the Drawings and Specifications of the other portions of the work for fixtures and finishes in connection with this work. The Contractor shall carefully examine the Drawings to determine the general construction conditions, and shall familiarize himself with all limitations caused by such conditions.

D. When discrepancies exist between scale and dimension, or between the Drawings of the various portions of the work, they shall be called to the attention of the Engineer for further instruction, whose instructions shall be final and binding and work promptly resumed without any additional cost to the Owner.

E. Review the construction details of the building(s) as illustrated on the Drawings of the various portions of the work and be guided thereby. Route conduits and set all boxes as required by the pace of the general construction.

F. The Drawings diagrammatically show the sizes and locations of the various equipment and devices, and the sizes of the major interconnecting wires, without showing exact details as to elevations, offsets, control wiring and other installation requirements. Carefully layout the work at the site to conform to the architectural and structural conditions, to avoid obstructions and to permit proper grading of pipe associated with other portions of the work. Determine the exact location of equipment and devices and connections thereto by reference to the submittals and rough-in drawings, and by measurements at the site. Make minor relocations necessitated by the conditions at the site, or directed by the Engineer, without additional cost to the Owner.

G. The Drawings and Specifications are intended to describe and illustrate systems which will not interfere with the structure of the building(s), fit into the available spaces, and insure complete and satisfactory operating installations. Prepare installation drawings for all critical areas illustrating the installation of the work in this Division as related to the work of all other Divisions and correct all interferences with the other portions of the work or with the building structures before the work

proceeds.

H. The Drawings do not indicate the existing electrical installations other than to identify modifications or extensions thereto. Visit the site and ascertain the conditions to be met and the work to be accomplished in removing and modifying the existing work, and in installing the new work. Failure to comply with this shall not constitute grounds for any additional payment in connection with removing or modifying any part of the existing installation or installing any new or temporary work under this Division.

1.11 SHOP DRAWINGS AND SUBMITTAL DATA

A. Process shop drawings and submittal data to insure that the proposed materials, equipment and devices conform to the requirements of the Contract Documents, and that there are no omissions or duplications. Provide layouts, fabrication information and data for systems, materials, equipment and devices proposed for the project.

B. Shop drawings shall be drawn on a scale not less than 1/4 inch equals 1 foot showing actual dimensions. Shop drawings shall include, but not be limited to:
   1. Distribution Panelboards

C. Submittal data (manufacturer's catalog data) shall include, but not be limited to:
   1. Equipment: panelboards, disconnect switches, circuit breakers, fuses, etc.
   2. Materials: conduit, conductors, connectors, supports, etc.

D. The submittal data shall not consist of manufacturer's catalogs or cut sheets that contain no indication of the exact item offered. The submission on individual items shall designate the exact item offered.

E. Do not submit detailed quantitative listings of materials, equipment and devices. It is the Contractor's responsibility to provide proper sizes and quantities to conform with Contract Documents.

1.12 SUBSTITUTIONS

A. Where a single manufacturer is mentioned by trade name or manufacturer's name, unless specifically noted otherwise, it is the only manufacturer that will be accepted.

B. Where multiple manufacturers are listed, none other than those manufacturers will be accepted.

C. It shall be understood that space allocations have been made on the basis of present and known future requirements and the dimensions of items of equipment or devices of a particular manufacturer whether indicated or not. If any item of equipment or device is offered in substitution which differs substantially in dimension or configuration from that indicated on the Drawings or specifications, provide as part of the submittal 1/4 inch equals 1 foot scaled drawings showing that the substitute can be installed in the space available without interfering with other portions of the work or with access for operations and maintenance in the completed project.

D. Where substitute equipment or devices requiring different arrangement or connections from that indicated is accepted by the Engineer, install the equipment or devices to operate properly and in harmony with the intent of the Contract Documents, making all incidental changes in piping, ductwork or wiring resulting from the equipment or device selection without any additional cost to the Owner. The Contractor shall pay all additional costs incurred by other portions of the work in connection with the substituted equipment or device.

E. The Engineer reserves the right to call for samples of any item of material, equipment or device offered in substitution, together with a sample of the specific item when, in their opinion, the quality of the item and/or the appearance is involved, and it is deemed that an evaluation of the item may be better made by visual inspection.

F. When any request for a substitution of material, equipment or device is submitted and rejected, the item named in the Contract Documents shall be furnished. Repetitive submittal of substitutions for the same item will not be considered.

1.13 INSTALLATION DRAWINGS

A. Prepare installation drawings for coordinating the work of this Division with the work of other Divisions, to illustrate its concealment in finished spaces, to avoid obstructions, and to demonstrate the adaptability of any item of material, equipment or device in the space upon which the Contract Documents are based.
B. Use these drawings in the field for the actual installation of this work. Provide three (3) copies, not for approval, to the Engineer for his information, review and record.

1.14 WORKMANSHIP AND INSTALLATION

A. In no case shall the Contractor provide a class of material, equipment, device or workmanship less than that required by the Contract Documents or applicable codes, regulations, ordinances or standards. All modifications which may be required by a local authority having legal jurisdiction over all or any part of the work shall be made by the Contractor without any additional charge. In all cases where such authority requires deviations from the requirements of the Drawings or Specifications, the Contractor shall report same to the Owner's Representative and shall secure his approval before the work is started.
B. The work shall be performed by properly licensed technicians skilled in their respective trades. All materials, equipment and devices shall be installed in accordance with the recommendations of the manufacturer and in the best standard practice to bring about results of a first class condition.
C. The NECA "Standards of Installation" as published by the National Electrical Contractors Association shall be considered a part of these Specifications, except as specifically modified by other provisions contained in these Specifications.

1.15 WARRANTY

A. All materials, equipment, devices and workmanship shall be warranted for a period of one year from the date of acceptance by the Engineer for beneficial use by the Owner, except that where specific equipment is noted to have extended warranties. The warranty shall be in accordance with AIA Document A201. The Contractor shall be responsible for the proper registration of these warranties so that the Owner can make all proper claims should future need develop.
B. The Contractor shall furnish to the Engineer for transmittal to the Owner, the name, address and telephone number of those persons responsible for service on systems and equipment covered by the warranty.

1.16 OPERATION PRIOR TO ACCEPTANCE

A. When any equipment is operable, and it is to the advantage of the Contractor to operate the equipment, the Contractor may do so provided that he properly supervises the operation, and retains full responsibility for the equipment operated. Regardless of whether or not the equipment has or has not been operated, the Contractor shall clean the equipment properly, make required adjustments and complete punch list items before final acceptance by the Owner.

1.17 INSTRUCTION OF OWNER'S PERSONNEL

A. Provide the services of competent engineers and/or technicians acceptable to the Engineer to instruct other representatives of the Owner in the complete and detailed operation of each item of equipment or

device of all the various electrical systems. These instructions shall be provided for whatever periods may be necessary to accomplish the desired results. Upon completion of these instructions, the Contractor shall obtain a letter of release, acknowledged by the Owner or his authorized representative, stating the dates on which the various kinds of instruction were given, and the personnel to whom the instructions were given.

B. The Contractor shall be fully responsible for proper maintenance of equipment and systems until the instructions have been given to the Owner's personnel and the letter of release acknowledged.

C. In providing the instructions to the Owner's personnel, the written operating and maintenance manuals shall be followed in all instances, and the Owner's personnel shall be familiarized with such manuals. Operating and maintenance manuals used for instructions shall include wiring diagrams, manufacturer's operating and maintenance instructions, parts lists (with sources identified), and other data as appropriate for each system.

1.18 SCHEDULE AND SEQUENCE OF WORK

A. The Contractor shall meet and cooperate with the Owner and Engineer to schedule and sequence this work so as to insure meeting scheduled completion dates and avoid delaying other portions of the work. Work requiring special sequencing shall be at no additional cost to the Owner and shall have no impact on the schedule.

1.19 INSPECTIONS AND CERTIFICATIONS

A. Obtain timely inspections of the installation by the regulatory authorities. Remedy any deficiencies to the satisfaction of the inspecting official.

B. Upon final completion of the work, obtain certificates of acceptance from the regulatory authorities. Deliver the certificates to the Engineer for transmission to the Owner.

1.20 EQUIPMENT INSTALLATION

A. Install equipment and devices in a manner to permit access to all surfaces or components, requiring such access, without the need to disassemble other unrelated parts of the work.

B. Equipment specified to be factory assembled and tested prior to shipment shall not be disassembled at the job site and reassembled at its final location. Apparatus not so specified may be disassembled and reassembled in the proper location.

C. Furnish all scaffolding, rigging and hoisting required for the installation of all the work.

1.21 EQUIPMENT FOUNDATIONS

A. Where indicated on the Drawings, provide foundations for electrical equipment. This shall consist of concrete housekeeping pads constructed in accordance with the details on the Drawings.

1.22 SLEEVES

A. Each conduit, regardless of material, which passes through a concrete slab, masonry wall, or roof or portion of the building structure shall be free from the structure and shall pass through a sleeve.

B. All sleeves shall be constructed from electrical-metallic tubing or equivalent weight galvanized steel tubing and shall be flush on both sides of the surface penetrated, unless noted otherwise. All sleeves penetrating the roof areas shall extend a minimum 10 inches above the roof with approved

weatherproof counterflashing attached to the conduit above the roof. All sleeves penetrating floors shall extend a minimum of 6 inches above the finished floors. The sleeves shall be sized to allow free passage of the conduit to be inserted.

C. Sleeves passing through walls or floors on or below grade or in moist areas shall be constructed of galvanized rigid steel and shall be designed with a suitable flange in the center to form a waterproof passage. After the conduit has been installed in the sleeves, the void space around the conduit shall be caulked with jute twine and filled with an asphalt-base compound to insure a waterproof penetration.

1.26 CUTTING AND PATCHING

A. Cut all openings required to install the work or to repair any defective work. This cutting shall be performed under the Engineer's direction and due diligence exercised to avoid cutting openings larger than required or in the wrong locations.

B. No cutting or drilling of any sort will be permitted in the webs of prestressed, precast concrete structural elements. Use core drills or power driven saws to cut openings in the flanges of other such elements; the use of reciprocating drills will not be permitted. The cutting of structural members without first having received written permission from the Engineer is prohibited.

C. Where openings are cut in fire-rated walls or floors, seal the annular space between the work installed and the fire-rated construction. Sealant, as applied, shall be fire rated to maintain the fire rating of the construction penetrated. Sealant shall be re-enterable (before fire) to alter penetrations. Apply in strict accordance with manufacturer's instructions.

1.27 SEALING OF PENETRATIONS

A. All penetrations in horizontal or vertical fire-rated construction shall be sealed using approved fire-rated sealing materials equivalent to the following:

1. Foam: Dow Corning 3-6548 RTV silicone foam, liquid component Part 4 (black) and liquid component Part B (off-white).
2. Sealant: Dow Corning 96-081 RTV silicone adhesive sealant.
3. Damming Materials: Mineral fiberboard, mineral fiber matting, mineral fiber putty, plywood or particle board, as selected by applicator.

B. Preparation: Remove combustible materials and loose impediments from penetration opening and involved surfaces. Remove free liquid and oil from penetration surfaces.

C. Installation: In accordance with manufacturer's instructions, install damming materials and sealant to cover and seal penetration openings; inject foam mixtures into openings.

1.28 PROTECTION OF APPARATUS

A. At all times take every precaution to properly protect apparatus from damage due to dust, dirt, water, etc. or from damage due to physical forces. Include the erection of temporary shelters as required, to adequately protect any apparatus stored at the site, the cribbing of any apparatus directly above the construction, and the covering of apparatus in the incomplete building with tarpaulins or other protective covering. Failure on the part of the Contractor to comply with the above to the entire satisfaction of the Engineer will be sufficient cause for the rejection of the pieces of apparatus in question.

B. Responsibility for the protection of apparatus extend also to existing apparatus involved in this Division of the work, whether such apparatus is designated to be used temporarily and later removed, or is to be reused as a part of the permanent installation. Erect temporary sheltering structures, provide

temporary bracing and supports, or cover equipment as required or directed to afford proper protection for that equipment.

C. The Contractor shall protect this work and the work of all other Contractors from damage by his work or workmen and shall make good any damage thus caused. He shall also be responsible for the proper protection of his equipment, machinery, materials and accessories delivered and installed on the job.

1.29 INSTALLATION AND CONNECTION OF OTHER DIVISION'S EQUIPMENT

A. Verify the electrical requirements of all equipment furnished under other Divisions, separate contracts, or by the Owner. Install conduit, power wiring, control wiring, devices, etc. as required for complete operation of all equipment.

1.30 OPTION TO RELOCATE OUTLETS AND RELATED DEVICES

A. The location of power, data and telephone outlets, wall switches and other related devices may be relocated at the Owner's option, at no additional cost to the Owner, to a point within 10 feet of their present location provided the Contractor is notified prior to installation.

1.31 COOPERATION AND CLEAN-UP

A. It shall be the responsibility of the Contractor to cooperate fully to keep the job site in a clean and safe condition. Upon the completion of the job, the Contractor shall immediately remove all of his tools, equipment, surplus materials and debris.

B. After the installation is complete, and before the equipment is energized, clean the interior and exterior of all equipment thoroughly. Clean equipment, removing all debris, rubbish and foreign materials. Each component shall be cleaned and all dust and other foreign material removed. Components shall be cleaned of oxidation. The inside and outside of all switchgear shall also be wiped clean with a lemon-oil rag after all other cleaning is complete.

C. Any portion of the work requiring touch-up finishing shall be so finished to equal the specified finish on the product.

1.32 RECORD DRAWINGS AND DOCUMENTATION FOR OWNER

A. The Contractor shall obtain at his own expense a complete set of prints on which to keep an accurate record of the installation of all materials, equipment and devices covered by the Contract. The record drawings shall indicate the location of all equipment and devices, and the routing of all systems. All piping and conduit buried in concrete slabs, walls and below grade shall be located by dimension; both horizontally and by vertical elevation, unless a surface mounted device in each space indicates the exact location. Obtain one complete reproducible set of the original drawings on which to neatly, legibly and accurately transfer all project related notations and deliver these drawings to the Architect/Engineer at job completion before final payment and delivery to the Owner. The above data, with the exception of the record drawings, shall be delivered prior to final acceptance.

B. The Contractor shall accumulate in duplicate during the job progress, the following data prepared in indexed 3-ring looseleaf, hard-back binders sized for 8-1/2 inch by 11 inch sheets. No binder shall exceed 3-1/2 inches thick. This data shall be turned over to the Architect/Engineer for review and subsequent delivery to the Owner prior to final acceptance.

1. Warranties, guarantees and manufacturer's directions on material, equipment and devices covered by the Contract.
2. Approved lighting fixture brochures, wiring diagrams and control diagrams.
3. Copies of approved submittals and shop drawings.

4. Operating instructions for major apparatus and recommended maintenance procedures.
5. Copies of all other data and/or drawings required during construction.
6. Repair parts list of major apparatus, including name, address and telephone number of local supplier or representative.
7. Tag charts and diagrams hereinbefore specified.

1.33 FINAL OBSERVATION

A. The purpose of the final observation is to determine whether the Contractor has completed the construction in accordance with the Contract Documents and that in the Owner Representative's opinion the installation is satisfactory for final acceptance by the Owner.
B. It shall be the responsibility of the Contractor to assure that the installation is ready for final acceptance prior to calling upon the Engineer to make a final observation.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION 260000

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Division Section as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of Division 26 submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer's and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Engineer's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for delivery.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Engineer's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Engineer for Contractor's use in preparing submittals.

1. Engineer will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing and Project record drawings.

    a. Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Contractor shall execute a data licensing agreement in the form of Halff Associates' Standard form.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. **Submit all submittal items required for each Specification Section within a Construction Division concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule. ***
    - **This submittal package shall be comprehensive document by Division and not piecemealed by specification section.**
3. Submit action submittals and informational submittals required by the same Specification Section concurrent.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination. For example, HVAC Equipment must be submitted and approved prior to approval of Electrical gear.

    a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 10 working days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals is indicated, allow 15 working days for initial review of each submittal.

D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Engineer.
    d. Name of Construction Manager, where applicable.
    e. Name of Contractor.
    f. Name of subcontractor.
    g. Name of supplier.
    h. Name of manufacturer.
    i. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Division Section or number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

    j. Number and title of appropriate Specification.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, initial submittal may serve as final submittal.

    a. When paper copies are required, submit one copy of submittal.

5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return without review submittals received from sources other than Contractor.
    a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:

        1) Project name.
        2) Date.
        3) Destination (To:).
        4) Source (From:).
        5) Name and address of Engineer.
        6) Name of Construction Manager, where applicable.
        7) Name of Contractor.
        8) Name of firm or entity that prepared submittal.
        9) Names of subcontractor, manufacturer, and supplier.
        10) Category and type of submittal.
        11) Submittal purpose and description.
        12) Specification Section number and title.

13) Specification paragraph number or drawing designation and generic name for each of multiple items.
14) Drawing number and detail references, as appropriate.
15) Indication of full or partial submittal.
16) Transmittal number, numbered consecutively.
17) Submittal and transmittal distribution record.
18) Remarks.
19) Signature of transmitter.

E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item. Alternately, submit package as a comprehensive .pdf document by Division with each Specification Section tabbed.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
3. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:

    a. Project name.
    b. Date.
    c. Name and address of Engineer.
    d. Name of Construction Manager, where applicable.
    e. Name of Contractor.
    f. Name of firm or entity that prepared submittal.
    g. Names of subcontractor, manufacturer, and supplier.
    h. Category and type of submittal.
    i. Submittal purpose and description.
    j. Specification Section number and title.
    k. Specification paragraph number or drawing designation and generic name for each of multiple items.
    l. Drawing number and detail references, as appropriate.
    m. Location(s) where product is to be installed, as appropriate.
    n. Related physical samples submitted directly.
    o. Indication of full or partial submittal.
    p. Transmittal number, numbered consecutively.
    q. Submittal and transmittal distribution record.
    r. Other necessary identification.
    s. Remarks.

F. Options: Identify options requiring selection by Engineer.

G. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Engineer on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Engineer’s action stamp.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to Project Web site or FTP site specifically established for Project.

    a. Engineer will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

1. Action Submittals: For submittal formats 11 x 17 and larger, submit two paper copies of each submittal unless otherwise indicated in addition to the electronically posted submittal. Engineer will return one copy of paper submittal.
2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

    a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each construction Division and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams showing factory-installed wiring.
    b. Printed performance curves.

c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data (8-1/2 x 11 format only) in the following format:

a. PDF electronic file.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer, if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 11 x 17 but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:
a. Two opaque (bond) copies of each submittal. Engineer will return one copy. Engineer will return one copy. Submit also one electronic file for record keeping.

4. BIM File Incorporation: Develop and incorporate Shop Drawing files into Building Information Model established for Project.

a. Prepare Shop Drawings in the following format: Same digital data software program, version, and operating system as the original Drawings.
b. Refer to Section 01 31 00 "Project Management and Coordination" for requirements for coordination drawings.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.
e. Specification paragraph number and generic name of each item.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. "Samples for Verification" Subparagraph below can be used with or without Samples for initial selection. Revise to suit Project.

E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

F. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

G. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

H. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

I. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

C. BIM File Incorporation: Incorporate delegated-design drawing and data files into Building Information Model established for Project.

1. Prepare delegated-design drawings in the following format: Same digital data software program, version, and operating system as the original Drawings.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

A. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

B. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

C. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

D. Submittals not required by the Contract Documents may be returned by the Engineer without action.

END OF SECTION 26 01 00

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.3 DEFINITIONS

A. EPDM: Ethylene-propylene-diene terpolymer rubber.

B. NBR: Acrylonitrile-butadiene rubber.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control test reports.

1.6 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Alcan Products Corporation; Alcan Cable Division.
2. American Insulated Wire Corp.; a Leviton Company.
3. General Cable Corporation.
4. Senator Wire & Cable Company.
5. Southwire Company.
6. Encore.

C. Copper Conductors: Comply with NEMA WC 70.

D. Conductor Insulation: Comply with NEMA WC 70 for Types THW THHN-THWN and SO.

2.2 CONNECTORS AND SPLICES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Hubbell Power Systems, Inc.
3. O-Z/Gedney; EGS Electrical Group LLC.
4. 3M; Electrical Products Division.
5. Tyco Electronics Corp.

C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Exposed Feeders: Type THHN-THWN, single conductors in raceway.

B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Type THHN-THWN, single conductors in raceway.

C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.

D. Feeders Installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.

E. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-THWN, single conductors in raceway.

F. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.

G. Branch Circuits or feeders installed below Raised Flooring: Type THHN-THWN, single conductors in raceway.

H. Class 1 Control Circuits: Type THHN-THWN, in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips that will not damage cables or raceway.

D. Support cables according to Section 26 05 29 "Hangers and Supports for Electrical Systems."

E. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors. Dimmer systems that require internal splicing shall be furnished and installed by the Dimmer provider.

C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 44 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 07 84 13 "Penetration Firestopping."

3.7 FIELD QUALITY CONTROL

A. Torque test conductor connections and terminations to manufacturer's recommended values.

END OF SECTION 26 05 19

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Grounding systems and equipment.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:
   1. Ground rods.
   2. Grounding arrangements and connections for separately derived systems.

C. Field quality-control reports.

D. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

   1. Instructions for periodic testing and inspection of grounding features at test wells grounding connections for separately derived systems.

      a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
      b. Include recommended testing intervals.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

D. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel, 3/4 inch by 10 feet (19 mm by 3 m) in diameter.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
1. .

B. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors.
3. Connections to Ground Rods at Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Flexible raceway runs.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System (where specified): Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

3.4 LABELING

A. Comply with requirements in Division 26 Section "Identification for Electrical Systems" Article for instruction signs. The label or its text shall be green.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

END OF SECTION 26 05 26

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes: Grounding systems and equipment.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:

1. Grounding arrangements and connections for separately derived systems.

C. Field quality-control reports.

D. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Instructions for periodic testing and inspection of grounding features at test wells grounding connections for separately derived systems.

a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
b. Include recommended testing intervals.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.2 CONNECTORS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

B. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

C. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

B. Conductor Terminations and Connections:
1. Underground Connections: Welded connectors.
2. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Flexible raceway runs.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.

3.4 LABELING

A. Comply with requirements in Division 26 Section "Identification for Electrical Systems" Article for instruction signs. The label or its text shall be green.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.

    a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

B. Grounding system will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

D. Report measured ground resistances that exceed the following values:

1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.

E. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

END OF SECTION 26 05 26

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Hangers and supports for electrical equipment and systems.
2. Construction requirements for concrete bases.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. RMC: Rigid metal conduit.

1.4 PERFORMANCE REQUIREMENTS

A. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.

B. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.

C. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

1.5 SUBMITTALS

A. Product Data: For the following:

1. Steel slotted support systems.

B. Shop Drawings: Show fabrication and installation details and include calculations for the following:

1. Trapeze hangers. Include Product Data for components.
2. Steel slotted channel systems. Include Product Data for components.
3. Equipment supports.
4. Roof supports as indicated.

1.6 QUALITY ASSURANCE

A. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Allied Tube & Conduit.
b. Cooper B-Line, Inc.; a division of Cooper Industries.
c. ERICO International Corporation.
d. GS Metals Corp.
e. Thomas & Betts Corporation.
f. Unistrut; Tyco International, Ltd.

2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
4. Channel Dimensions: Selected for applicable load criteria.

B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.

C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Hilti Inc.
2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

2. Mechanical-Expansion Anchors: Insert-wedge-type, steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1) Cooper B-Line, Inc.; a division of Cooper Industries.
2) Hilti Inc.
3) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.

3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
6. Toggle Bolts: All-steel springhead type.
7. Hanger Rods: Threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.

B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.

1. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel.

D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

3.2 SUPPORT INSTALLATION

A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.

B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.

C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:

1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners or threaded through wall.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
6. To Steel: Beam clamps complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.

E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.

B. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting.

1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).

B. Touchup: Comply with requirements in Division 09 for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 26 05 29260529

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

B. Related Sections include the following:

1. Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for exterior ductbanks, manholes, and underground utility construction.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. EPDM: Ethylene-propylene-diene terpolymer rubber.

C. FMC: Flexible metal conduit.

D. LFMC: Liquidtight flexible metal conduit.

E. NBR: Acrylonitrile-butadiene rubber.

F. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work.

1. Custom enclosures and cabinets.

C. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:

1. Structural members in the paths of conduit groups with common supports.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AFC Cable Systems, Inc.
2. Alflex Inc.
3. Allied Tube & Conduit; a Tyco International Ltd. Co.
4. Anamet Electrical, Inc.; Anaconda Metal Hose.
5. Electri-Flex Co.

C. Rigid Steel Conduit: ANSI C80.1.

D. EMT: ANSI C80.3.

E. FMC: Zinc-coated steel

F. LFMC: Flexible steel conduit with PVC jacket.

G. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
1. Fittings for EMT: Steel -screw or compression type.

H. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 BOXES, ENCLOSURES, AND CABINETS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
2. EGS/Appleton Electric.
3. Erickson Electrical Equipment Company.
4. Hoffman.
5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
6. O-Z/Gedney; a unit of General Signal.

B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

D. Nonmetallic Outlet and Device Boxes: NEMA OS 2.

E. Metal Floor Boxes: Cast or sheet metal, fully adjustable, rectangular. (As indicated on drawings)

F. Nonmetallic Floor Boxes: Nonadjustable, round.

G. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

H. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.

I. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.

1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
2. Nonmetallic Enclosures: Plastic or fiberglass.

J. Cabinets:

1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.

2.3 SLEEVES FOR RACEWAYS

A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.

B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

C. Sleeves for Rectangular Openings: Galvanized sheet steel with minimum 0.052- or 0.138-inch (1.3- or 3.5-mm) thickness as indicated and of length to suit application.

D. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

2.4 SLEEVE SEALS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Advance Products & Systems, Inc.
2. Calpico, Inc.
3. Metraflex Co.
4. Pipeline Seal and Insulator, Inc.

B. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.

1. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
2. Pressure Plates: Carbon steel Include two for each sealing element.
3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Exposed Conduit: Rigid steel conduit.
2. Concealed Conduit, Aboveground: EMT
3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
6. Application of Handholes and Boxes for Underground Wiring:
   a. Refer to plans for basis of design.

B. Minimum Raceway Size: 1/2-inch.

C. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Complete raceway installation before starting conductor installation. Use conduit caps to protect installed conduit against entrance of dirt and moisture before area is dryed in and cable or wire are not immediately installed. Tape covering of conduit ends is not acceptable.

C. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."

D. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

E. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

F. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

G. Raceway Terminations at Locations Subject to Moisture or Vibration: Use **insulating bushings** to protect conductors, including conductors smaller than No. 4 AWG.

H. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.

I. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
   1. Where otherwise required by NFPA 70.

J. Expansion-Joint Fittings: Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F (17 deg C), and that has straight-run length that exceeds 25 feet (7.6 m).

   1. Install expansion-joint fittings for each of the following locations, and provide type and quantity of fittings that accommodate temperature change listed for location:

      a. Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F (70 deg C temperature change.
      b. Outdoor Locations Exposed to Direct Sunlight: 155 deg F (86 deg C) temperature change.

   2. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F (0.06 mm per meter of length of straight run per deg C) of temperature change.
   3. Install each expansion-joint fitting with position, mounting, and piston setting selected according to manufacturer's written instructions for conditions at specific location at the time of installation.
   4. Unless expansion fitting has internal bonding braid, a green insulated grounding conductor shall be pulled in conduit.

K. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

   1. Use LFMC in damp or wet locations subject to severe physical damage.
   2. Use LFMC in damp or wet locations not subject to severe physical damage.

L. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

M. Set metal floor boxes level and flush with finished floor surface.

3.3 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

B. Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls.

C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

D. Rectangular Sleeve Minimum Metal Thickness:

   1. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side greater than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
   2. For sleeve cross-section rectangle perimeter equal to, or greater than, 50 inches (1270 mm) and 1 or more sides equal to, or greater than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

E. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.

F. Cut sleeves to length for mounting flush with both surfaces of walls.

G. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.

H. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway unless sleeve seal is to be installed.

I. Seal space outside of sleeves with grout for penetrations of concrete and masonry.

J. Aboveground, Exterior-Wall Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.

3.4 SLEEVE-SEAL INSTALLATION

A. Install to seal underground, exterior wall penetrations.

B. Use type and number of sealing elements recommended by manufacturer for raceway material and size. Position raceway in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.5 PROTECTION

A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 26 05 33

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Warning labels and signs.
5. Instruction signs.
6. Equipment identification labels.
7. Miscellaneous identification products.

1.3 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

1.4 QUALITY ASSURANCE

A. Comply with NFPA 70.

B. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

1.5 COORDINATION

A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.

C. Coordinate installation of identifying devices with location of access panels and doors.

D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 CONDUCTOR IDENTIFICATION MATERIALS

A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.

B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.

C. Snap-Around Labels: Slit, pre-tensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

D. Snap-Around, Color-Coding Bands: Slit, pre-tensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

E. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

2.2 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Baked-Enamel Warning Signs:

1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal size, 7 by 10 inches (180 by 250 mm).

C. Warning label and sign shall include, but are not limited to, the following legends:
1. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."
2. Location of multiple main disconnects are at defined locations. Approved by Authority Having Jurisdiction.
3. Where transformer disconnect is remote. Provide label indicating where the disconnect is located.

2.3 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. inches (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.

1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.4 EQUIPMENT IDENTIFICATION LABELS

A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).

2.5 CABLE TIES

A. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi (82.7 MPa).
3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
4. Color: Black.

2.6 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in Division 09 painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify identity of each item before installing identification products.

B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

C. Apply identification devices to surfaces that require finish after completing finish work.

D. Secure plastic name plates to equipment fronts using screws or rivets. Use of adhesive shall be per owner’s approval only.

E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.

F. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.2 IDENTIFICATION SCHEDULE

A. Accessible Raceways and 600 V or Less, for Service, Feeder, and Branch Circuits More Than A, and 120 V to ground: Identify with self-adhesive vinyl tape applied in bands. Install labels at 10-foot (3-m)] [30-foot (10-m) maximum intervals.

B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:

1. Normal Power – White letters on Black background.

C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for feeder and branch-circuit conductors.

a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG.
b. Colors for 208/120-V Circuits:

1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral: White.

c. Colors for 480/277-V Circuits:

1) Phase A: Brown.
2) Phase B: Orange. (Purple)
3) Phase C: Yellow.
4) Neutral: Gray.

d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.

D. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.

E. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.

F. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

G. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Baked-enamel warning signs.

1. Comply with 29 CFR 1910.145.
2. Identify system voltage with black letters on an orange background.
3. Apply to exterior of door, cover, or other access.
4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
   a. Controls with external control power connections.

H. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.

I. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

1. Labeling Instructions:
   a. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
   b. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
   c. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

2. Equipment to Be Labeled:

   a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be engraved, laminated acrylic or melamine label.
   b. Enclosures and electrical cabinets.
   c. Access doors and panels for concealed electrical items.
   d. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
   e. Boxes and enclosures.
   f. Enclosed switches.
   g. Enclosed circuit breakers.
   h. Remote-controlled switches and control devices.
   i. Monitoring and control equipment.

3. Nameplate Detail:

   a. For circuit breakers, panelboards, switchboards, disconnect, and contactors: ¼-inch letters, identify source to and device load serves, including location.

END OF SECTION 26 05 53

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following types of dry-type transformers rated 600 V and less, with capacities up to 1000 kVA:

1. Distribution transformers.

1.3 SUBMITTALS

A. Product Data: Include rated nameplate data, capacities, weights, dimensions, minimum clearances, installed devices and features, and performance for each type and size of transformer indicated.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Wiring Diagrams: Power, signal, and control wiring.

C. Qualification Data: For testing agency.

D. Source quality-control test reports.

E. Field quality-control test reports.

F. Operation and Maintenance Data: For transformers to include in emergency, operation, and maintenance manuals.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain each transformer type through one source from a single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with IEEE C57.12.91, "Test Code for Dry-Type Distribution and Power Transformers."

D. Comply with DOE 2016 Energy Efficiency Transformers.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Temporary Heating: Apply temporary heat according to manufacturer's written instructions within the enclosure of each ventilated-type unit, throughout periods during which equipment is not energized and when transformer is not in a space that is continuously under normal control of temperature and humidity.

1.6 COORDINATION

A. Coordinate size and location of concrete bases with actual transformer provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Coordinate installation of wall-mounting and structure-hanging supports with actual transformer provided.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Eaton Electrical Inc.; Cutler-Hammer Products. (Only for Mid Valley and Nursing Allied Health Campuses)
2. Square D; Schneider Electric. (Only for Pecan and Technology Campuses)
3. Siemens

2.2 GENERAL TRANSFORMER REQUIREMENTS

A. Description: Factory-assembled and -tested, air-cooled units for 60-Hz service.

B. Cores: Grain-oriented, non-aging silicon steel.

C. Coils: Continuous windings without splices except for taps.

1. Internal Coil Connections: Brazed or pressure type.
2. Coil Material: Aluminum or Copper.

2.3 DISTRIBUTION TRANSFORMERS

A. Comply with NEMA ST 20, and list and label as complying with UL 1561.

B. Cores: One leg per phase.

C. Enclosure: Ventilated, NEMA 250, Type 2.

1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.

D. Enclosure: Ventilated, NEMA 250, Type 3R.

1. Core and coil shall be encapsulated within resin compound, sealing out moisture and air.

E. Transformer Enclosure Finish: Comply with NEMA 250.

1. Finish Color: ANSI 49 gray ANSI 61 gray.

F. Taps for Transformers Smaller Than 3 kVA: One 5 percent tap above normal full capacity.

G. Taps for Transformers 7.5 to 24 kVA: One 5 percent tap above and one 5 percent tap below normal full capacity.

H. Taps for Transformers 25 kVA and Larger: Two 2.5 percent taps above and two 2.5 percent taps below normal full capacity.

I. Insulation Class: 220 deg C, UL-component-recognized insulation system with a maximum of 150 deg C rise above 40 deg C ambient temperature.

J. Energy Efficiency for Transformers Rated 15 kVA and Larger:

1. Complying with NEMA TP 1, Class 1 efficiency levels.
2. Tested according to NEMA TP 2.

K. Electrostatic Shielding: Each winding shall have an independent, single, full-width copper electrostatic shield arranged to minimize interwinding capacitance.

1. Arrange coil leads and terminal strips to minimize capacitive coupling between input and output terminals.
2. Include special terminal for grounding the shield.
3. Shield Effectiveness:

a. Capacitance between Primary and Secondary Windings: Not to exceed 33 picofarads over a frequency range of 20 Hz to 1 MHz.
b. Common-Mode Noise Attenuation: Minimum of minus 120 dBA at 0.5 to 1.5 kHz; minimum of minus 65 dBA at 1.5 to 100 kHz.
c. Normal-Mode Noise Attenuation: Minimum of minus 52 dBA at 1.5 to 10 kHz.

L. Low-Sound-Level Requirements: Minimum of 3 dBA less than NEMA ST 20 standard sound levels when factory tested according to IEEE C57.12.91.

2.4 IDENTIFICATION DEVICES

A. Nameplates: Engraved, laminated-plastic or metal nameplate for each distribution transformer, mounted with corrosion-resistant screws. Nameplates and label products are specified in Division 26 Section "Identification for Electrical Systems."

2.5 SOURCE QUALITY CONTROL

A. Test and inspect transformers according to IEEE C57.12.91.

B. Factory Sound-Level Tests: Conduct sound-level tests on equipment for this Project.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions for compliance with enclosure- and ambient-temperature requirements for each transformer.

B. Verify that field measurements are as needed to maintain working clearances required by NFPA 70 and manufacturer's written instructions.

C. Examine walls, floors, roofs, and concrete bases for suitable mounting conditions where transformers will be installed.

D. Verify that ground connections are in place and requirements in Division 26 Section "Grounding and Bonding for Electrical Systems" have been met. Maximum ground resistance shall be 5 ohms at location of transformer.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install wall-mounting transformers level and plumb with wall brackets fabricated by transformer manufacturer.

B. Construct concrete bases and anchor floor-mounting transformers according to manufacturer's written instructions.

3.3 CONNECTIONS

A. Ground equipment according to Division 26 Section "Grounding and Bonding for Electrical Systems."

B. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.4 ADJUSTING

A. Record transformer secondary voltage at each unit for at least 48 hours of typical occupancy period. Adjust transformer taps to provide optimum voltage conditions at secondary terminals. Optimum is defined as not exceeding nameplate voltage plus 10 percent and not being lower than nameplate voltage minus 3 percent at maximum load conditions. Submit recording and tap settings as test results.

B. Output Settings Report: Prepare a written report recording output voltages and tap settings.

3.5 CLEANING

A. Vacuum dirt and debris; do not use compressed air to assist in cleaning.

END OF SECTION 16461

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Distribution panelboards.

1.3 DEFINITIONS

A. SVR: Suppressed voltage rating.

B. SPD (Surge Protection Device)

1.4 ACTION SUBMITTALS

A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
2. Detail enclosure types and details for types other than NEMA 250, Type 1.
3. Detail bus configuration, current, and voltage ratings.
4. Short-circuit current rating of panelboards and overcurrent protective devices.
5. Include evidence of NRTL listing for series rating of installed devices.
6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
7. Include wiring diagrams for power, signal, and control wiring.
8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on log-log graph paper; include selectable ranges for each type of overcurrent protective device.

1.5 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Reports:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

B. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Two spares for each type of panelboard cabinet lock.
2. Circuit Breakers Including GFCI and Ground Fault Equipment Protection (GFEP) Types: Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
3. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.8 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NEMA PB 1.

1.10 PROJECT CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

    a. Ambient Temperature: Not exceeding 23 deg F (minus 5 deg C) to plus 104 deg F (plus 40 deg C).
    b. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet (2000 m).

C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of electric service.
2. Comply with NFPA 70E.

1.11 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

1.12 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Flush- and surface-mounted cabinets.

1. Rated for environmental conditions at installed location.

    a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
    b. Outdoor Locations: NEMA 250, Type 3R.

2. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Panel front shall be fabricated so that the panel may be opened to access the breakers and also to allow access to breaker wiring without removal of the front.
3. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
4. Finishes:

    a. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
    b. Back Boxes: Galvanized steel.

5. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

B. Incoming Mains Location: As required and as shown on plans.

C. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
3. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear load. Where shown on plans.

D. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Main and Neutral Lugs: Mechanical type.
3. Ground Lugs and Bus-Configured Terminators: Mechanical type.
4. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

G. Arc Flash labels shall be installed on panelboards at short circuit levels indicated on plans. Calculation of fault current is 11/22/2017 for panel lables as indicated on plans.

2.2 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider, Square D
3. Siemens Energy & Automation, Inc.

B. Panelboards: NEMA PB 1, power and feeder distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.

2. Door or doors shall allow access to breakers dead front and also to the breaker wiring without removal of front.

D. Mains: As indicated.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers with electronic trip and adjustable long time short time and instantaneous trips..

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider, Square D.
3. Siemens Energy & Automation, Inc.

B. Mains: Circuit breaker or lugs only.

C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

E. Door shall be available to open over breaker lugs.
   a. .

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider; Square D.
3. Siemens Energy & Automation, Inc.

B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Breakers below 125 A shall be Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits.
2. Breakers 125A and larger shall have Electronic trip with rms sensing; field-replaceable rating plug or field-replicable electronic trip and the following field-adjustable settings:

   a. Instantaneous trip.
   b. Long- and short-time pickup levels.
   c. Long- and short-time time adjustments.
3. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:

   a. Standard frame sizes, trip ratings, and number of poles.

b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.

2.5 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store panelboards according to NECA 407.

B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panelboards and accessories according NEMA PB 1.1.

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.

D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

E. Install overcurrent protective devices and controllers not already factory installed.

1. Set field-adjustable, circuit-breaker trip ranges.

F. Install filler plates in unused spaces.

G. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future.

H. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

I. Comply with NECA 1.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

D. Device Nameplates: For distribution panels label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

D. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Perform the following infrared scan tests and inspections and prepare reports:

    a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.
    b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.
    c. Instruments and Equipment:

        1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

E. Panelboards will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.6 PROTECTION

A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION 26 24 16

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Distribution panelboards.

1.3 DEFINITIONS

A. SVR: Suppressed voltage rating.

B. SPD (Surge Protection Device)

1.4 ACTION SUBMITTALS

A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
2. Detail enclosure types and details for types other than NEMA 250, Type 1.
3. Detail bus configuration, current, and voltage ratings.
4. Short-circuit current rating of panelboards and overcurrent protective devices.
5. Include evidence of NRTL listing for series rating of installed devices.
6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.
7. Include wiring diagrams for power, signal, and control wiring.
8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on log-log graph paper; include selectable ranges for each type of overcurrent protective device.

1.5 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Reports:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

B. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Two spares for each type of panelboard cabinet lock.
2. Circuit Breakers Including GFCI and Ground Fault Equipment Protection (GFEP) Types: Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
3. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.8 QUALITY ASSURANCE

A. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NEMA PB 1.

E. Comply with NFPA 70.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NEMA PB 1.

1.10 PROJECT CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

    a. Ambient Temperature: Not exceeding 23 deg F (minus 5 deg C) to plus 104 deg F (plus 40 deg C).
    b. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.
2. Altitude not exceeding 6600 feet (2000 m).

C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of electric service.
2. Comply with NFPA 70E.

1.11 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

1.12 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Flush- and surface-mounted cabinets.

1. Rated for environmental conditions at installed location.

    a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
    b. Outdoor Locations: NEMA 250, Type 3R.

2. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover. Panel front shall be fabricated so that the panel may be opened to access the breakers and also to allow access to breaker wiring without removal of the front.
3. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
4. Finishes:

    a. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
    b. Back Boxes: Galvanized steel.

5. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

B. Incoming Mains Location: As required and as shown on plans.

C. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
3. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear load. Where shown on plans.

D. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Main and Neutral Lugs: Mechanical type.
3. Ground Lugs and Bus-Configured Terminators: Mechanical type.
4. Feed-Through Lugs: Mechanical type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.
5. Subfeed (Double) Lugs: Mechanical type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.
6. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

G. Arc Flash labels shall be installed on panelboards at short circuit levels indicated on plans. Calculation of fault current is 11/22/2017 for panel lables as indicated on plans.

2.2 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider, Square D
3. Siemens Energy & Automation, Inc.

B. Panelboards: NEMA PB 1, power and feeder distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.

2. Door or doors shall allow access to breakers dead front and also to the breaker wiring without removal of front.

D. Mains: As indicated.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers with electronic trip and adjustable long time short time and instantaneous trips..

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider, Square D.
3. Siemens Energy & Automation, Inc.

B. Mains: Circuit breaker or lugs only.

C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.

D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

E. Door shall be available to open over breaker lugs.
a. .

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider; Square D.
3. Siemens Energy & Automation, Inc.

B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits.
2. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replicable electronic trip;125A and Larger and the following field-adjustable settings:

a. Instantaneous trip.
b. Long- and short-time pickup levels.

c. Long- and short-time time adjustments.

3. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:

a. Standard frame sizes, trip ratings, and number of poles.
b. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.

2.5 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store panelboards according to NECA 407.

B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panelboards and accessories according NEMA PB 1.1.

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.

D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

E. Install overcurrent protective devices and controllers not already factory installed.

1. Set field-adjustable, circuit-breaker trip ranges.

F. Install filler plates in unused spaces.

G. Stub four 1-inch empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future.

H. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

I. Comply with NECA 1.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Division 26 Section "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

D. Device Nameplates: For distribution panels label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

D. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
3. Perform the following infrared scan tests and inspections and prepare reports:

    a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.
    b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.
    c. Instruments and Equipment:

        1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

E. Panelboards will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.6 PROTECTION

A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION 26 24 16

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Cartridge fuses rated 600-V ac and less for use in control circuits, enclosed switches, panelboards, or switchboards as indicated on drawings.
2. Spare-fuse cabinets.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material, dimensions, descriptions of individual components, and finishes for spare-fuse cabinets. Include the following for each fuse type indicated:

1. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
2. Current-limitation curves for fuses with current-limiting characteristics.
3. Time-current coordination curves (average melt) and current-limitation curves Paragraph below is defined in Division 01 Section "Submittal Procedures" as an "Informational Submittal."

B. Operation and Maintenance Data: For fuses to include in operation and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Current-limitation curves for fuses with current-limiting characteristics.
2. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with NEMA FU 1 for cartridge fuses.

D. Comply with NFPA 70.

1.5 PROJECT CONDITIONS

A. Where ambient temperature to which fuses are directly exposed is more than 100 deg F (38 deg C), apply manufacturer's ambient temperature adjustment factors to fuse ratings.

1.6 COORDINATION

A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

1.7 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses:
    a. Three spare of each size and type

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper Bussmann, Inc.
2. Ferraz Shawmut, Inc.
3. Littelfuse, Inc.

2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.
1. Furnish fuse puller.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.

B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.

C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

A. Cartridge Fuses:
   1. Feeders: Class L, time delay Class RK1, time delay Class RK5, time delay.

3.3 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

B. Install spare-fuse cabinet(s).

3.4 IDENTIFICATION

A. Install labels complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems" and indicating fuse replacement information on inside door of each fused switch and adjacent to each fuse block, socket, and holder.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Fusible switches.
2. Molded-case circuit breakers (MCCBs).
3. Enclosures.

1.3 DEFINITIONS

A. NC: Normally closed.

B. NO: Normally open.

C. SPDT: Single pole, double throw.

1.4 SUBMITTALS

A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.

1. Enclosure types and details for types other than NEMA 250, Type 1.
2. Current and voltage ratings.
3. Short-circuit current ratings (interrupting and withstand, as appropriate).
4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
5. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.

B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.

1. Wiring Diagrams: For power, signal, and control wiring.

C. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:

1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.

2. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source from single manufacturer.

B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. Comply with NFPA 70.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:

1. Ambient Temperature: Not less than minus 22 deg F (minus 30 deg C) and not exceeding 104 deg F (40 deg C).
2. Altitude: Not exceeding 6600 feet (2010 m).

1.7 COORDINATION

A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

1.8 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
2. Fuse Pullers: Two for each size and type.

PART 2 - PRODUCTS

2.1 FUSIBLE SWITCHES

A. Basis-of-Design Product: Subject to compliance with requirements, provide or product by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. Schneider; Square D.
3. Siemens Energy & Automation, Inc.

B. Type HD, Heavy Duty, Single Throw, 240 or 600-V ac, UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate fuses, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
5. Hookstick Handle: Allows use of a hookstick to operate the handle.
6. Lugs: Mechanical type, suitable for number, size, and conductor material.
7. Service-Rated Switches: Labeled for use as service equipment.

2.2 NONFUSIBLE SWITCHES

A. Basis-of-Design Product: Subject to compliance with requirements, provide product by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
3. Siemens Energy & Automation, Inc.

B. Type HD, Heavy Duty, Single Throw, 240 or 600-V ac: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper neutral conductors.
3. Hookstick Handle: Allows use of a hookstick to operate the handle.
4. Lugs: Mechanical type, suitable for number, size, and conductor material.

2.3 MOLDED-CASE CIRCUIT BREAKERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
3. Siemens Energy & Automation, Inc.

B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.

C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

D. Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.
2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.

2.4 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
1. Outdoor Locations: NEMA 250, Type 3R.
2. Other Wet or Damp, Indoor Locations: NEMA 250, Type 4.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.

B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.

C. Install fuses in fusible devices.

D. Comply with NECA 1.

3.3 IDENTIFICATION

A. Comply with requirements in Division 26 Section "Identification for Electrical Systems."

1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.4 FIELD QUALITY CONTROL

A. Acceptance Testing Preparation:

1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

B. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

C. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

3.5 ADJUSTING

A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION 26 28 16

BASIS OF DESIGN
SPECIFICATIONS

Section 11 61 00
Stage Equipment

1. GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 GOVERNING CLAUSE: For the sake of brevity these specifications shall omit phrases such as "Contractor shall furnish and install", "unless otherwise indicated or specified", etc., but these phrases are nevertheless implied. Mention of materials and operations requires the Contractor to furnish and install such materials and perform such operations completely to the satisfaction of the Owner.

1.3 SCOPE OF WORK: One company shall be responsible for the installation of all aspects of the stage equipment. Work under this section shall include the furnishing of all labor, materials, tools, transportation services, supervision, etc., necessary to complete installation of new stage equipment as well as any other items as herein listed, all as described in these specifications, as illustrated on the accompanying drawings; or as directed by the Architect or his Representative. The following are included in the stage equipment contractor's scope of work on this project:

- Remove existing dimmer racks and install new dimming and control system as manufactured by Electronic Theatre Controls
  - Stage lighting dimming and controls
  - House lighting dimming and controls
  - Stage work light controls
  - Touchscreen controls for booth and backstage
  - DMX network stations for booth, backstage and lighting positions
- Install 4 new pipe battens to support new stage lighting connector strips and fixtures
- Remove existing connector strips and incandescent strip lights and provide for LED colored lighting.
- Provide new fader wing for control console
- Provide equipment for DMX control system to control LED fixtures
- Provide and install new LED stage wash and Cyclorama lighting fixtures
- System commissioning and training

1.4 CONTRACTOR'S QUALIFICATIONS: The Contractor shall be fully experienced in the fabrication and installation of the stage equipment as herein specified. The Contractor shall have been in business for five (5) full years preceding the date of this bid doing work similar to the type specified and under the same name. The Contractor shall employ only fully trained stage riggers and mechanics for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Contractor and all directions given by him shall be as binding as if given by the Contractor.

1.5 SUBSTITUTIONS: Specific fabric and items of equipment are specified by trade names. It has been determined by the Owner that these are the particular items desired by the owner and established a standard of quality, equipment function and/or process. It is not the purpose nor intent of these documents to eliminate competitive bids. In order to allow proper and fair comparison of pricing, each contractor is required to submit their base bid price on the specified equipment. A contractor may submit an alternate bid based on equipment different from that specified only if that Contractor has received prior approval in writing from the Owner at least 10 days prior to bid. Accompanying each request shall be a letter specifically detailing each substitution including catalog data, specifications, swatches, operative samples, technical information, drawings, performance and test data, and complete descriptive and functional

information to assist in a fair evaluation. Failure to submit any substitution for prior approval or not providing sufficient data for evaluation shall require the exact item specified to be furnished. Owner's approval of a substitution for bid purposes will not relieve the contractor from the responsibility of meeting all specification criteria. If an approval of a substitution is granted, the Contractor shall be fully responsible for any and all changes (wiring, power, distribution, support structure, etc.) such substitution shall require.

1.6 DEFECTIVE OR NON-APPROVED MATERIALS: Should any stage equipment be found defective, not meeting specifications, or that which has not been approved in writing by the Owner shall, upon discovery (including any time within the period of the guarantee), be replaced with the specified equipment or material at no additional cost.

1.7 GUARANTEE: The Contractor shall guarantee all of the work that is performed under this contract, including all materials, and workmanship, for a period of one (1) year from the date of full acceptance of the work. Lamps for lighting fixtures shall be guaranteed against failure for thirty (30) days. Nothing in this guarantee shall cause repair or replacement by the Contractor where negligence, neglect or improper operation by the Owner has caused the failure of any equipment installed under this contract.

1.8 DISCREPANCIES: All equipment shall be sized to fit properly. The exact measurements are the responsibility of the Contractor. If there are discrepancies in the specifications, the Contractor shall ask for a clarification from the Owner. If no clarification is requested, the Owner's judgment shall rule.

1.9 PRE-APPROVED STAGE EQUIPMENT CONTRACTORS

A. One company shall be responsible for the installation of all aspects of the stage equipment as specified in this section. This shall include but not be limited to all rigging, curtains, tracks, motors and control, stage lighting fixtures, stage/house dimming, and dimming controls and miscellaneous equipment. The following companies have prior approval as STAGE EQUIPMENT CONTRACTORS:

1. Texas Scenic Company, Inc.
2. AV Pro

B. In order to be considered as a Stage Equipment Contractor on this project, each Contractor requesting approval must submit to the Architect at least ten (10) days prior to the date of bid opening a letter expressing his intent to bid. This letter shall include a list of at least five (5) projects of similar size and scope completed by this firm within the last five (5) years. If motorized line-shaft rigging is required on this project, the letter shall indicate the number of line-shaft set provided and installed and the manufacturer of the equipment on each of the five projects. Inspection of one completed installation may be requested by the Architect/Architect's Representative prior to consideration of request to bid. Companies which have no experience in the installation and operation of line-shaft rigging will not be considered. The stage equipment contractor shall have been in business under the same name for five (5) full years preceding the date of this bid doing work similar to the type specified. The decision of the Architect as to the capability of the Bidder to successfully complete and maintain the system, based on this pre-qualification information shall be final.

C. Pre-Bid request letter shall include a statement that all major items of equipment shall be bid and supplied as specified, or shall contain details of all proposed substitute equipment for review by the Architect/Architect's Representative. Substitute equipment items to include specifications, parts numbers, and details of interconnection to proposed system. The decision of the Architect/Architect's Consultant as to the acceptability of substitute equipment shall be final.

D. The Stage Equipment Contractor shall employ only fully trained stage riggers and mechanics, assisted by common laborers, for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Stage Equipment

Contractor and all directions given by him shall be as binding as if given by the Stage Equipment Contractor.

1.10 ACCEPTABLE RIGGING EQUIPMENT MANUFACTURERS

A. For the purposes of establishing a standard of quality desired on this project, the rigging hardware products of H & H Specialties, Inc. of South El Monte, California are specified. Other stage equipment hardware with prior approval for bidding shall be any and all companies (not an individual) that are contributing members or sustaining members in good standing with United States Institute of Theatre Technology (USITT) at the time of the bid will be considered. Specific items of hardware by any approved manufacturer must still meet the criteria established in these specifications for those items. The rigging hardware products of other manufactures who are not members of USITT may not be used in the construction of this project.

B. Manufacturers whose equipment has prior approval to be used on this project include the following companies:

1. Texas Scenic Company, Inc.
2. H & H Specialties

1.11 DOCUMENTATION

A. **SHOP DRAWINGS:** Shop drawings and equipment data sheets shall be submitted to the Owner under general provisions within 45 days after award of the contract. Approval of submitted equipment shall be obtained prior to equipment purchasing or fabrication. If shop drawings are rejected, correct and resubmit in the manner as specified. All shop drawing information shall be submitted at the same time; no partial submittal will be accepted. Drawings shall indicate complete details, dimensions, product types and locations of all equipment, clearances required, guides, cables, sets, Contractor fabricated equipment, and all other details required to completely describe the work to be performed. Submittals drawings shall be presented at a scale of not less than 1/8" = 1'-0" for conduit plans, 1/4" for equipment layouts, ½" = 1'-0" for mounting details, and ½" = 1'-0" for plate and panel details. Each sheet to allow space for approval stamps and have the name of the project, the contractors and/or the supplier's name, address telephone number, and the date submitted. Submit the following items for Owner's approval, prior to fabrication:

1. Stage plan view
2. Stage side section view
3. Plan and elevation views indicating all electrical hardware locations and layout
4. Provide full dimensions for panel layouts with finishes and materials for all custom panels.
5. Details of installation and erection, including adjoining conditions and necessary clearances.
6. Indication by arrow and boxed caption of each variation from contract drawing and specifications, except those indicated as acceptable in specifications or on drawings

B. **RECORD DRAWINGS AND DATA:** Submit in accordance with General Provisions. Also within 30 days of final test and completion of the installation, submit the following to the Owner:

1. Three (3) complete sets of "as built and approved" drawings (rolled, not folded showing systems and elements as installed, including field modifications and adjustments.
2. Three (3) sets of maintenance data including a list indicating replacement parts lists for all items of equipment, wiring diagrams, control diagrams, any and all keys for cabinets, racks, key operated switches etc. and complete operation manuals.
3. Three (3) notarized Certificates of Flameproofing for each fabric used.
4. Three (3) Certificates of Guarantee
5. Electrical distribution drawing of the theatre in plan view (1/4" = 1'-0") indicating all electrical outlets and their corresponding circuit number dry-mounted to foam board and framed under non-glare glass and mounted on the wall in the control booth

C. **INSTRUCTION OF OWNER PERSONNEL**: This contractor or his representative, fully knowledgeable and qualified in systems operation, shall provide eight (8) hours of instruction to the Owner-designated personnel on the use and operation of this System. Designated instruction times shall be arranged through the Owner.

D. **PERMITS:** Obtain all permits necessary for the execution of any work pertaining to the installation, and conform in all trades with all applicable local codes and with the National Electric Code**.** Obtain all permits necessary for operation of any equipment by the Owner.

E. **CLEAN UP:** It shall be the responsibility of this Contractor to remove all debris from the building or site caused by his operations to a common trash point or receptacle on the job site, as determined by the Owner.

2. STAGE DIMMING AND CONTROL SYSTEM

2.1 Pipe Battens and Rigging – Refer to section 11060 for pipe battens. Coordinate battens required for the theatrical lighting and stage equipment supplier.

2.2 Electrical requirements of the Stage Equipment Contractor: The Stage Equipment Contractor shall be responsible for all stage lighting and dimming hardware as specifically detailed in these specifications. This shall include:

1. Furnishing all equipment specified (some to be given to Electrical Contractor for installation)
2. Hanging of connector strips on specified stage rigging hardware.
3. All control wire and installation of control wire including terminations of control systems
4. Set-up of the control console.
5. Demonstration of equipment to owner's representatives.
6. Any conduit for power and controls for theatrical lighting system
   a. Provide pull strings in conduit for control wire
7. Any power wiring
8. Power requirements and termination of same in dimmer rack and connector strips
9. Any load wiring, fixtures, or termination at fixtures for house lighting or emergency lighting
10. Mounting of plug boxes, floor pockets, back boxes and gridiron junction boxes (locations to be coordinated with stage equipment contractor)

2.3 FACTORY CHECK-OUT: This contract shall also include the services of a qualified engineer regularly employed by the manufacturer of the system who shall check the installation and ensure its proper operation. No part of the system shall be energized before being so checked and the installation approved. Failure to observe this provision shall automatically relieve the manufacturer of any responsibility concerning the proper operation of the system or any part thereof and the replacement of parts which may have been damaged by the premature energizing. This engineer shall be made promptly available on the job site within fourteen (14) days after the manufacturer has received written notice.

2.4 DIMMER RACKS

A. The installation rack shall be the Sensor as manufactured by Electronic Theatre Controls, Inc., or equal. The fully digital dimmer rack shall consist of up to 48 dimmer module spaces. Sensor rack systems shall be UL Listed and CSA Approved, and shall be so labeled when delivered to job site.

B. The dimmer rack shall be provided with wired spaces for all circuits. Dimmers shall be provided for all base circuits and blank modules provided for all expansion circuits. Provide base circuits indicated in bill of materials.

C. The dimmer racks shall house all dimmer modules, control electronics, and branch circuit breakers. Provide module and breaker quantities as indicated below. System shall have the performance features that follow.

1. Rack shall be UL Listed and labeled.
2. Rack shall employ dead front construction of code gage steel.
3. Each rack must have a hinged locking door.
4. Each rack must have an electrostatic air filter.
5. Ventilation shall be by a low-noise fan activated by DMX level data.
6. In the event of an over-temperature situation, each dimmer shall be shut down independently as required. Systems that shut the entire rack down upon over-temp will not be accepted.
7. Each 48-module dimmer rack shall be provided with a keypad and LCD display for rack configuration, backup and fault indication.

8. Each rack shall maintain active scene for a user-programmable period after loss of DMX-512 signal from console.
9. Standard control format shall be USITT DMX-512. Dimmer rack CEM must accept two independent DMX signals concurrently in a highest-takes-precedence manner for each dimmer.
10. Rack shall store a minimum of thirty-two user-programmable back-up looks which may be activated in case of loss of control signal.
11. Each dimmer must include discrete "boost" feature to allow over-voltage output to compensate for voltage drop in branch wiring and allow a true 120 volts at the fixture lamp or “trim” maximum voltage output to lengthen lamp life.
12. Each rack shall include a beacon which shall flash to indicate failures.

2.5 DIMMER MODULES

A. Dimmer modules shall be plug-in type. No more than two dimmers per module will be accepted.

B. Modules shall be assembled of aluminum or steel. Dimmer modules with housings manufactured of plastic or a flammable material will not be accepted.

C. Each dimmer module shall contain fully magnetic circuit breakers(s), solid state switching module(s), choke(s) and connectors.

D. Each dimmer must have the discreet capability to operate in a dimmed or a non-dimmed mode. This function shall be selectable from the control console or the rack-mounted keypad.

E. Each dimmer circuit shall use solid state switching devices consisting of two silicon controlled rectifiers in an inverse parallel configuration, snubber network and all required gating circuitry on the high voltage side of an integral opto-coupled control voltage isolator.

F. Dimmer modules shall include toroidal filters to reduce lamp filament sing and limit the radio frequency interference on line and load conductors. The current rise-time shall be not less than 500 microseconds measured at 90 degree conduction angle from 10-90% of the output wave-form with the dimmer operating at rated load.

G. Power efficiency shall be at least 97% at full load.

H. Dimmer shall accept hot-patching of an incandescent load up to the full capacity of the dimmer.

I. Dimmer output shall be regulated for incoming line voltage variations, except that the output voltage cannot be increased above a level equal to line voltage less dimmer insertion drop. Line regulation shall be +/- 1V over a 90-140 volt range for changes up to 10%. Load regulation shall be +/- 2V for 1-100% of rated current. Dimmers shall employ a scheme for compensation for harmonic distortion of the power line for any variation in load.

J. Response to control shall be less than 25 milliseconds.

2.6 ARCHITECTURAL CONTROL PROCESSOR UNIT

A. The auxiliary control processor unit shall support 32 wall stations or remote devices in any number of rooms. A maximum of 512 DMX dimmers may be assigned to one of 128 system control zones. A maximum of 250 presets and system events shall be allowed. The processor shall receive inputs from wall stations, lighting control consoles, Windows® based PCs, and/or third party devices. It shall process the information and distribute it to dimmer racks, building management systems, audio/visual systems, and/or other associated devices. A Windows® based configuration program shall allow patching dimmers to zones, with proportional levels and user selectable dimmer output curves; programming presets and system events; naming of presets and channels; and setting room and station assignments.

B. The processor unit shall be a microprocessor based, solid state device. The field programmable system configuration and program information shall be stored in Flash Memory, which does not

require battery backup. Systems requiring battery backup memory shall not be acceptable. A PCMCIA socket shall be provided for system configuration and program information backup and update. Systems without a simple method of backup shall not be acceptable.

C. A DMX512 input shall be provided for snapshot input. This input shall accept level information from any DMX source. The DMX512 input shall be opto-isolated. Systems without opto-isolation shall not be acceptable.

D. A DMX512 output shall be provided. This output shall transmit level information to dimmers and other DMX devices.

E. An Echelon® Link Power™ network port shall be provided for communications with wall stations, remote interfaces, and other third party network devices. The Link Power network shall utilize polarity-independent, low-voltage Class II unshielded twisted pair (UTP) wiring, type Belden 8471, or equivalent. The network topology may be bus, loop, home-run, or any combination of these three. Systems utilizing a proprietary low voltage station network shall not be acceptable.

F. In the event of power loss, the processor shall return to its last valid state when power is restored.

G. It shall be possible to record presets, consisting of any number of zones set to any level with an associated fade time. It shall be possible to recall a preset from a pushbutton, remote input, Astronomical Time Clock event (ATC), or macro.

H. A macro language shall allow sequences of presets and system events to be stored and recalled. Conditional arguments may be used within a macro to check time or input states. Macros may be assigned to pushbuttons, remote inputs, and/or ATC events.

I. An internal ATC shall allow presets and system events to be recalled at a preprogrammed time relative to sunrise or sunset or at a specific time of day. Systems not providing an internal ATC shall not be acceptable.

J. A room combine function shall allow adjacent sections of a dividable room to be combined or divided, such that their combined lighting may be controlled from any or all of their wall stations. Room combine functions may be assigned to pushbuttons remote inputs, macro, or ATC events.

K. A setup menu shall be provided with the processor. This menu shall be accessed using the LCD display and keypad of the CEM on which the processor is mounted. This menu shall provide basic setup functions. A Windows® based configuration program shall be provided for setup and programming of any size system. All functions of the system may be configured and monitored using this program. Configuration shall not be required in systems with only one room.

L. This unit shall be UNISON by ETC or Premiere 2200SE by Strand.

2.7 TOUCHSCREEN LCD CONTROL STATION

A. LCD stations shall contain a back-lit graphic Liquid Crystal Display (LCD) with a touchscreen interface. The LCD station shall provide a graphical user interface. The graphical user interface shall provide system configuration, programming, and playback displays.

B. The LCD station shall provide a means of configuring a single room system. This configuration shall include patching dimmers to zones and assigning profiles to zones.

C. The LCD station shall provide a means of programming the system. It shall be possible to program and edit presets and macros, with event timing, using the LCD station. It shall be possible to program and edit Astronomical Time Clock (ATC) events and assign presets and macros to ATC events using the LCD.

D. Room Combine configurations shall be controlled using the LCD. It shall be possible to import a bitmap image of a divisible room to be used as a graphical map for room combine functions.

E. It shall be possible to recall presets and macros from the LCD station. Zone levels shall also be directly controllable using the LCD.

F. All LCD functions shall be password protected, allowing several levels of security. If no password is assigned to a function, the password screen shall not appear.

G. LCD Touchscreen station shall be by ETC

2.8 ENTRY STATIONS

A. Stations shall consist of one programmable pushbuttons with integral green LEDs. These pushbuttons shall normally activate user programmable presets. The LEDs shall identify the active preset. When a preset is selected, the LED shall change to full intensity.

B. Entry stations shall be by ETC

2.9 DISTRIBUTION

A. DISTRIBUTION DESCRIPTION

1. Wiring devices shall be fabricated from 16 gauge cold rolled steel. Devices shall be properly cleaned, primed and painted with flat black baked enamel. Circuit numbers shall be 2" high adhesive backed black numbers on yellow background.
2. Individual pigtails and outlets shall be evenly spaced, on 12" centers in connector strips, or as otherwise specified. Where a circuit would fall on a joint it shall be moved 3" towards the junction box end of the strip.
3. Pigtails shall be three-wire type "SO" rubber jacketed cable sized for the circuit capacity. Connectors are 20A stage pin connectors. Internal wiring shall be sized to circuit capacity and terminated in feed through compression terminals at one end for ease of installation. Wire shall be rated at 125'.
4. Devices except for wall mounted boxes shall be supplied with appropriate hardware for mounting as shown on the drawings. Connector strips shall have brackets on 5' centers.
5. Wiring devices shall be UL Laboratories Listed.

B. CONNECTOR STRIPS

Provide two (2) cable strain relief grips and one (1) cable cradle for each section of multi-conductor cable. Units to be sized for proper fit and function.

2.10 WIRING PRODUCTS AND EQUIPMENT

A. Connector strips

1. Each Section shall consist of a 4”x4” 18 gauge steel wireway with removable cover sections fro access, labeled with circuit numbers
2. Each strip shall have terminal compartment which shall be factory installed on the right or left end as required and shall contain molded barrier type terminals for feed connection. The unit shall be provided with terminal strips for feed connections. Knockouts, cable clamps, and “Kellums” cable grips shall be provided when appropriate.
3. The strip shall be provided with heavy steel mounting straps on approximately 5’ center to grip up to 2” pipe.
4. Type S or SO 18” cable pigtails shall be secured by strain relief and shall be furnished with two pin and Ground “Stage Pin” connectors. Flush stage pin connectors shall be provided for work lights and as indicated. Internal wiring shall be rated at 125 degrees Centigrade
5. External Finish shall be black powder coat epoxy. The entire unit shall be UL labeled.

B. Gridiron Junction Boxes:

1. Each unit shall be surface mounted code gauge steel box located as shown on the drawings.
2. The unit shall be provided with terminal strips for feed connections. Knockouts, cables clamps and kellums cable grips shall be provided when appropriate. Access shall be by means of a removable cover. Finish shall be black baked enamel and entire unit shall be UL labeled.

C. Plug-in Boxes Flush Receptacles

1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female

receptacles shall be stage pin type. Finish shall be baked flat enamel. The unit shall be UL listed.

D. Plug-in Boxes with Pigtails:

1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female receptacles shall be stage pin connector attached to 18" rubber covered cable pigtails. Finish shall be baked black enamel. The unit shall be UL listed.

E. Floor Pockets:

1. Flush mounted receptacle outlet assembly complete with receptacles.
2. Provide two 20A stage pin connector receptacles for connection to dimmer rack circuits
3. Provide one 20A duplex receptacle for connection to building circuits
4. Box: Steel minimum of 16 gauge by 10" deep
5. Cover Plate: Cast iron or cast aluminum with non skid safety tread surface and self closing door with cable notches.

2.11 DIMMING, CONTROLS, AND DISTRIBUTION BILL OF MATERIALS

Sensor Dimming Rack to consist of:

1 **SR3-48** - Black Sensor3 48-Module Dimmer Rack - Designed for 3 phase 4 wire and ground operation at a maximum of 800A, 120/208V, 60Hz AC
1 **SR3-48 DOOR** - Black SR3-48 Locking Door with Filter
1 **CEM3** - CEM3 Control Module
42 **D20** - Dual 20A Dimmer Module, 350ms rise time (84 Dimmers)
6 **R20AF** - Dual 20A Relay Module with Advanced Features (12 Relays)

1 **DRD12-24-120** - DRd12 100-120V Rack Enclosure - Designed for 3 phase 4 wire with ground operation at a maximum of 200A
1 **P-DRD-TK** - DRd Paradigm Termination Kit - Required for DRd with Paradigm processor
1 **P-ACP2** - Paradigm Architectural Control Processor
1 **P-SPM** - Paradigm Station Power Module - supports 32 stations and (1) 500m wire segment
12 **D20-** - Dual 20A 120V Dimmer Module, 350ms rise time (24 Dimmers)

CONTROL SYSTEM TO CONSIST OF:

Control Equipment Rack to consist of:

1 **RACK** - Black 19" rack sized as job requires and to include: quad power box, and blank panels to fill
1 **DOOR** - Door for Rack

Network Control Equipment to consist of:

1 **PATCH PANEL 24X** - 2U 19" rack-mount patch panel with 24 open slots
24 Cat5e Modular Jack for above Patch Panel
1 **MAP BR2** - 2U Brush Grommet Panel
24 2' CAT5 Patch cable, black
1 **DELL 3524P** - 24-port 10/100 + 2-Port Gigabit Switch with POE
1 **MAP 1000R** - 1000VA / 750W rack-mount UPS

Ion 1000 Control Console accessories to consist of: (to be added to existing Ion Console)

1 **FADW 2X20** - Black Universal 2x20 Fader Wing:
40 - Faders with 2 buttons each
2 - LCD Screens for Text Display
1 - USB A to B Cable
1 - Power supply for remote operation
1 - Dust Cover

Control Plug-in Stations to consist of:

7 **ECPB NET** - ETCNet Control Plug-in Station with:
1 - RJ-45 (568B) Connector in XLR case
4 **ECPB PB1** - ETC 1-gang Surface Mount Back Box (2.5" deep)
4 **ECPB PB-U** - U-Bolt Kit for 1 and 2 gang ECPB Plug-in Station (includes hanger bracket and 2 U-bolts, back box not included but required)

Gateways to consist of:

5 **N3T2G-2F** - Portable (Touring) Net3 Only Two Port Output Gateway to Contain:
2 - XLR-D5F, 5-pin Female XLR connectors
with hanger bracket for c-clamp or U-bolt
5 **400CC** - Black C-Clamp
5 **400SC** - Black Safety Cable

ARCHITECTURAL CONTROL SYSTEM TO CONSIST OF:

Unison Paradigm Control Station to consist of:

2 **P-TS7-4** - Paradigm 7" Touchscreen Station to include:
- 7" Black Touchscreen Assembly
- Mounting Collar
- LinkConnect/ Ethernet termination kit
2 **P-LCD-FBB** - Paradigm flush mount touchscreen back box

DISTRIBUTION EQUIPMENT TO CONSIST OF:

Pigtail and Outlet Boxes to consist of:

11 **9302B-36** - Surface Mount Pigtail box with 2 - 36" pigtails with 20A Stage Pin (2P&G/GPC) connectors
11 **-OU** - Offset U-Bolt Pipe-mounting Assembly

Connector Strips to consist of:

1 **9955-(16BP36/16)-(4ADO/4)-XX** - Connector strip 55'-0” long with:
16 - 36” pigtails and 20A Stage Pin (2P&G/GPC) connectors wired on 20 - 20A circuits
4 – panel mount 20A Edison Duplex (5-20RD) connectors wired on 4 - 20A circuits
12 – hanging brackets
2 **9955-(12BP36/12)-(4ADO/4)-XX** - Connector strip 55'-0” long with:
12 - 36” pigtails and 20A Stage Pin (2P&G/GPC) connectors wired on 20 - 20A circuits

4 – panel mount 20A Edison Duplex (5-20RD) connectors wired on 4 - 20A circuits
12 – hanging brackets

1 **9306B-36** - Surface Mount Pigtail box with 2 - 36" pigtails with 20A Stage Pin (2P&G/GPC) connectors and 4 – 36" pigtails with Edison connectors
-OU - Offset U-Bolt Pipe-mounting Assembly

Electrical contractor (TSC) shall remove existing strip lights and install the new connector strips over the stage.

New plug boxes will be installed for the front catwalk lighting positions.

4 New battens shall be installed to support new LED stage lights and cyclorama lights.

Electrical contractor shall dedicate 2 circuits to control florescent work lights over stage.

Circuit layout will consist of

22 Circuits Front Catwalks – circuits 1 through 22 (20 dimmed and 2 relay)
20 circuits on 1st lighting batten – Circuits 23 through 42 (16 dimmed and 4 relay)
16 circuits on 2nd lighting batten – circuits 43 through 58 (12 dimmed and 4 relay)
16 circuits on 3rd lighting batten – circuits 59 through 74 (12 dimmed and 4 relay)
6 circuits on 4th lighting batten – circuits 75 through 80 (2 dimmed and 4 relay)
16 circuits House lights and work lights – Circuits 81 through 96

2.12 FXTURES

A. LED PROFILE FIXTURE (front of stage)
1 The ellipsoidal spotlights shall be the Color Source Spot LED as manufactured by Electronic Theatre Controls, Inc. Lamp Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.
2 Optical train shall combine a compact LED with a spherical lens to produce an optimum cosine field.
3 Spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.
4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles. Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. INCANDESCENT PROFILE FIXTURE (front of stage)
1 The ellipsoidal spotlights shall be the Source Four Ellipsoidal Spotlight as manufactured by Electronic Theatre Controls, Inc. Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.

2 Source Four's optical train shall combine a high efficiency lamp with a spherical lens to produce an optimum cosine field.

3 Source Four ellipsoidal spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.

4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles, Reflector secured with shock mounts, Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. LED COLOR WASH FIXTURE (Overstage)

1. General
   a. The fixture shall be a color-mixing LED fixture with DMX control of intensity as well as color changing. The fixture shall be a Color Source LED PAR fixture as manufactured by Electronics Theatre Controls, Inc. or approved equal.
   b. All LED fixtures shall be provided by a single manufacturer to ensure compatibility.
   c. The fixture shall comply with USITT DMX-512 A.

C. CYC LIGHT

1. General: the fixture shall be a compact, lightweight, color-mixing LED asymmetrical wash fixture with 8 or 16 bit DMX control of intensity and color.
2. Fixture shall be equipped with Red, Green Blue & Amber 3 watt Luxeon K2 LED's.
3. On board multi-voltage power supply; 100-240 VAC
4. Feed thru data & power capabilities
5. Compatible with DMX and RDM protocols
6. Push button addressing
7. Pre-programmed modes for fixed colors, timed color changes and strobes.
8. Fixture shall be constructed of 18-gauge steel. Construction shall employ all corrosion-resistant materials and hardware. Product shall be free of pits and burrs.
9. Physical: dimensions shall be 25" wide x 14" high x 6.4" deep. Weight: Approx: 18 lbs.
10. Optional rigid steel yoke with locking dog tilt handle shall be available for overhead pipe mounting.
11. ETL, cETL & CE listed
12. Product shall be Altman Spectra Cyc 100 Made in the USA

D. WORK LIGHT

1. General: the fixture shall be a compact, lightweight, WHITE LED HIGH BAY LIGHT wash fixture as manufactured by Big Ass Lights
2. Fixture shall produce 10,000 lumens of white light and include a WIDE LMT diffused lens, yoke to hang on pipe batten, c-clamp and safety chain.
3. Fixture shall be provided with 4' pigtail with Edison connector installed.

E. FIXTURES TO INCLUDE:

15 – ETC Color Source PAR LED

11 – Altman Spectra Cyc 100 – LED cyclorama light

8 – BAL HIGH BAY LED Work Light

All fixture provided with power and control cables, c-clamps, lenses, safety cables, and accessories required for fully functioning system

3. INSTALLATION

3.1 GENERAL

A. Verify that job conditions are ready to receive work of this section. Notify Architect of any existing condition which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.

B. Verify that field measurements are as shown on shop drawings.

C. Verify that mechanical, electrical, and other items affecting work of this section are in place and ready to receive the work.

3.2 INSTALLATION

A. Install using skilled workmen in accordance with manufacturer's printed instructions and recommendations.

B. Install work in accordance highest industry standards. Handle materials to avoid dents and other damages.

C. Set and secure materials and components rigid, plumb, and square.

END OF SECTION

Section 11 61 00
Stage Equipment

PROPOSAL FORM McALLEN HIGH SCHOOL

SUBMIT PROPOSAL TO **Rueben D Trevino**
Executive Director for Facilities, maintenance and operations
4309 Warrior Dr, Suite B
McAllen, TX 78501
956-661-6887 (office)
956-605-9296 (Fax)

Supplier Proposal of _____

Address _____
_____

Contact Information **Person** _____ **Phone** _____
FAX _____

PROPOSAL DUE BY JUNE 15, 2017 BY 2PM
PRICING MUST BE PROVIDED FOR EACH OF THE FOLLOWING SECTIONS.
McALLEN ISD MAY DETERMINE TO ACCEPT ALL OR PART OF THE SECTIONS TO FIT AVAILABLE FUNDS

STAGE CURTAINS AND RIGGING INSTALLED _____

THEATRICAL DIMMING AND CONTROLS INSTALLED _____

THEATRICAL LED FIXTURES INSTALLED _____

COMPLETE PACKAGE INSTALLED _____

PROPOSED BY _____
Signature of member of firm authorized to sign proposal

_____
Printed name of member signing proposal

TITLE _____

DATE _____

Section 11 61 00
Stage Equipment

1. GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 GOVERNING CLAUSE: For the sake of brevity these specifications shall omit phrases such as "Contractor shall furnish and install", "unless otherwise indicated or specified", etc., but these phrases are nevertheless implied. Mention of materials and operations requires the Contractor to furnish and install such materials and perform such operations completely to the satisfaction of the Owner.

1.3 SCOPE OF WORK: One company shall be responsible for the installation of all aspects of the stage equipment. Work under this section shall include the furnishing of all labor, materials, tools, transportation services, supervision, etc., necessary to complete installation of new stage equipment as well as any other items as herein listed, all as described in these specifications, as illustrated on the accompanying drawings; or as directed by the Architect or his Representative. The following are included in the stage equipment contractor's scope of work on this project:

- Remove existing dimmer rack and architectural controls
- Provide and install new control wire for architectural control stations, and DMX controls as needed
- Provide and install new dimmer rack and architectural control system
- Provide and install new stage lighting fixtures
- System commissioning and training

1.4 CONTRACTOR'S QUALIFICATIONS: The Contractor shall be fully experienced in the fabrication and installation of the stage equipment as herein specified. The Contractor shall have been in business for five (5) full years preceding the date of this bid doing work similar to the type specified and under the same name. The Contractor shall employ only fully trained stage riggers and mechanics for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Contractor and all directions given by him shall be as binding as if given by the Contractor.

1.5 SUBSTITUTIONS: Specific fabric and items of equipment are specified by trade names. It has been determined by the Owner that these are the particular items desired by the owner and established a standard of quality, equipment function and/or process. It is not the purpose nor intent of these documents to eliminate competitive bids. In order to allow proper and fair comparison of pricing, each contractor is required to submit their base bid price on the specified equipment. A contractor may submit an alternate bid based on equipment different from that specified only if that Contractor has received prior approval in writing from the Owner at least 10 days prior to bid. Accompanying each request shall be a letter specifically detailing each substitution including catalog data, specifications, swatches, operative samples, technical information, drawings, performance and test data, and complete descriptive and functional information to assist in a fair evaluation. Failure to submit any substitution for prior approval or not providing sufficient data for evaluation shall require the exact item specified to be furnished. Owner's approval of a substitution for bid purposes will not relieve the contractor from the responsibility of meeting all specification criteria. If an approval of a substitution is granted, the Contractor shall be fully responsible for any and all changes (wiring, power, distribution, support structure, etc.) such substitution shall require.

1.6 DEFECTIVE OR NON-APPROVED MATERIALS: Should any stage equipment be found defective, not meeting specifications, or that which has not been approved in writing by the Owner shall, upon discovery (including any time within the period of the guarantee), be replaced with the specified equipment or material at no additional cost.

1.7 GUARANTEE: The Contractor shall guarantee all of the work that is performed under this contract, including all materials, and workmanship, for a period of one (1) year from the date of full acceptance of the work. Lamps for lighting fixtures shall be guaranteed against failure for thirty (30) days. Nothing in this guarantee shall cause repair or replacement by the Contractor where negligence, neglect or improper operation by the Owner has caused the failure of any equipment installed under this contract.

1.8 DISCREPANCIES: All equipment shall be sized to fit properly. The exact measurements are the responsibility of the Contractor. If there are discrepancies in the specifications, the Contractor shall ask for a clarification from the Owner. If no clarification is requested, the Owner's judgment shall rule.

1.9 PRE-APPROVED STAGE EQUIPMENT CONTRACTORS

A. One company shall be responsible for the installation of all aspects of the stage equipment as specified in this section. This shall include but not be limited to all rigging, curtains, tracks, motors and control, stage lighting fixtures, stage/house dimming, and dimming controls and miscellaneous equipment. The following companies have prior approval as STAGE EQUIPMENT CONTRACTORS:

1. Texas Scenic Company, Inc.
2. AV Pro

B. In order to be considered as a Stage Equipment Contractor on this project, each Contractor requesting approval must submit to the Architect at least ten (10) days prior to the date of bid opening a letter expressing his intent to bid. This letter shall include a list of at least five (5) projects of similar size and scope completed by this firm within the last five (5) years. If motorized line-shaft rigging is required on this project, the letter shall indicate the number of line-shaft set provided and installed and the manufacturer of the equipment on each of the five projects. Inspection of one completed installation may be requested by the Architect/Architect's Representative prior to consideration of request to bid. Companies which have no experience in the installation and operation of line-shaft rigging will not be considered. The stage equipment contractor shall have been in business under the same name for five (5) full years preceding the date of this bid doing work similar to the type specified. The decision of the Architect as to the capability of the Bidder to successfully complete and maintain the system, based on this pre-qualification information shall be final.

C. Pre-Bid request letter shall include a statement that all major items of equipment shall be bid and supplied as specified, or shall contain details of all proposed substitute equipment for review by the Architect/Architect's Representative. Substitute equipment items to include specifications, parts numbers, and details of interconnection to proposed system. The decision of the Architect/Architect's Consultant as to the acceptability of substitute equipment shall be final.

D. The Stage Equipment Contractor shall employ only fully trained stage riggers and mechanics, assisted by common laborers, for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Stage Equipment Contractor and all directions given by him shall be as binding as if given by the Stage Equipment Contractor.

1.10 ACCEPTABLE RIGGING EQUIPMENT MANUFACTURERS

A. For the purposes of establishing a standard of quality desired on this project, the rigging hardware products of H & H Specialties, Inc. of South El Monte, California are specified. Other stage equipment hardware with prior approval for bidding shall be any and all companies (not an individual) that are contributing members or sustaining members in good standing with United States Institute of Theatre Technology (USITT) at the time of the bid will be considered. Specific items of hardware by any approved manufacturer must still meet the criteria established in these specifications for those items. The rigging hardware products of other manufactures who are not members of USITT may not be used in the construction of this project.

B. Manufacturers whose equipment has prior approval to be used on this project include the following companies:

1. Texas Scenic Company, Inc.
2. H & H Specialties

1.11 DOCUMENTATION

A. SHOP DRAWINGS: Shop drawings and equipment data sheets shall be submitted to the Owner under general provisions within 45 days after award of the contract. Approval of submitted equipment shall be obtained prior to equipment purchasing or fabrication. If shop drawings are rejected, correct and resubmit in the manner as specified. All shop drawing information shall be submitted at the same time; no partial submittal will be accepted. Drawings shall indicate complete details, dimensions, product types and locations of all equipment, clearances required, guides, cables, sets, Contractor fabricated equipment, and all other details required to completely describe the work to be performed. Submittals drawings shall be presented at a scale of not less than 1/8" = 1'-0" for conduit plans, 1/4" for equipment layouts, ½" = 1'-0" for mounting details, and ½" = 1'-0" for plate and panel details. Each sheet to allow space for approval stamps and have the name of the project, the contractors and/or the supplier's name, address telephone number, and the date submitted. Submit the following items for Owner's approval, prior to fabrication:

1. Stage plan view
2. Stage side section view
3. Plan and elevation views indicating all electrical hardware locations and layout
4. Provide full dimensions for panel layouts with finishes and materials for all custom panels.
5. Details of installation and erection, including adjoining conditions and necessary clearances.
6. Indication by arrow and boxed caption of each variation from contract drawing and specifications, except those indicated as acceptable in specifications or on drawings

B. RECORD DRAWINGS AND DATA: Submit in accordance with General Provisions. Also within 30 days of final test and completion of the installation, submit the following to the Owner:

1. Three (3) complete sets of "as built and approved" drawings (rolled, not folded showing systems and elements as installed, including field modifications and adjustments.
2. Three (3) sets of maintenance data including a list indicating replacement parts lists for all items of equipment, wiring diagrams, control diagrams, any and all keys for cabinets, racks, key operated switches etc. and complete operation manuals.
3. Three (3) notarized Certificates of Flameproofing for each fabric used.
4. Three (3) Certificates of Guarantee
5. Electrical distribution drawing of the theatre in plan view (1/4" = 1'-0") indicating all electrical outlets and their corresponding circuit number dry-mounted to foam board and framed under non-glare glass and mounted on the wall in the control booth

C. INSTRUCTION OF OWNER PERSONNEL: This contractor or his representative, fully knowledgeable and qualified in systems operation, shall provide eight (8) hours of instruction to the Owner-designated personnel on the use and operation of this System. Designated instruction times shall be arranged through the Owner.

D. PERMITS: Obtain all permits necessary for the execution of any work pertaining to the installation, and conform in all trades with all applicable local codes and with the National Electric Code**.** Obtain all permits necessary for operation of any equipment by the Owner.

E. CLEAN UP: It shall be the responsibility of this Contractor to remove all debris from the building or site caused by his operations to a common trash point or receptacle on the job site, as determined by the Owner.

2. STAGE DIMMING AND CONTROL SYSTEM

2.1 Pipe Battens and Rigging – Refer to section 11060 for pipe battens. Coordinate battens required for the theatrical lighting and stage equipment supplier.

2.2 Electrical requirements of the Stage Equipment Contractor: The Stage Equipment Contractor shall be responsible for all stage lighting and dimming hardware as specifically detailed in these specifications. This shall include:

1. Furnishing all equipment specified (some to be given to Electrical Contractor for installation)
2. Hanging of connector strips on specified stage rigging hardware.
3. All control wire and installation of control wire including terminations of control systems
4. Set-up of the control console.
5. Demonstration of equipment to owner's representatives.
6. Any conduit for power and controls for theatrical lighting system
   a. Provide pull strings in conduit for control wire
7. Any power wiring
8. Power requirements and termination of same in dimmer rack and connector strips
9. Any load wiring, fixtures, or termination at fixtures for house lighting or emergency lighting
10. Mounting of plug boxes, floor pockets, back boxes and gridiron junction boxes (locations to be coordinated with stage equipment contractor)

2.3 FACTORY CHECK-OUT: This contract shall also include the services of a qualified engineer regularly employed by the manufacturer of the system who shall check the installation and ensure its proper operation. No part of the system shall be energized before being so checked and the installation approved. Failure to observe this provision shall automatically relieve the manufacturer of any responsibility concerning the proper operation of the system or any part thereof and the replacement of parts which may have been damaged by the premature energizing. This engineer shall be made promptly available on the job site within fourteen (14) days after the manufacturer has received written notice.

2.4 DIMMER RACKS

A. The installation rack shall be the Sensor as manufactured by Electronic Theatre Controls, Inc., or equal. The fully digital dimmer rack shall consist of up to 48 dimmer module spaces. Sensor rack systems shall be UL Listed and CSA Approved, and shall be so labeled when delivered to job site.

B. The dimmer rack shall be provided with wired spaces for all circuits. Dimmers shall be provided for all base circuits and blank modules provided for all expansion circuits. Provide base circuits indicated in bill of materials.

C. The dimmer racks shall house all dimmer modules, control electronics, and branch circuit breakers. Provide module and breaker quantities as indicated below. System shall have the performance features that follow.

1. Rack shall be UL Listed and labeled.
2. Rack shall employ dead front construction of code gage steel.
3. Each rack must have a hinged locking door.
4. Each rack must have an electrostatic air filter.
5. Ventilation shall be by a low-noise fan activated by DMX level data.
6. In the event of an over-temperature situation, each dimmer shall be shut down independently as required. Systems that shut the entire rack down upon over-temp will not be accepted.
7. Each 48-module dimmer rack shall be provided with a keypad and LCD display for rack configuration, backup and fault indication.
8. Each rack shall maintain active scene for a user-programmable period after loss of DMX-512 signal from console.
9. Standard control format shall be USITT DMX-512. Dimmer rack CEM must accept two independent DMX signals concurrently in a highest-takes-precedence manner for each dimmer.

10. Rack shall store a minimum of thirty-two user-programmable back-up looks which may be activated in case of loss of control signal.
11. Each dimmer must include discrete "boost" feature to allow over-voltage output to compensate for voltage drop in branch wiring and allow a true 120 volts at the fixture lamp or “trim” maximum voltage output to lengthen lamp life.
12. Each rack shall include a beacon which shall flash to indicate failures.

2.5 DIMMER MODULES

A. Dimmer modules shall be plug-in type. No more than two dimmers per module will be accepted.

B. Modules shall be assembled of aluminum or steel. Dimmer modules with housings manufactured of plastic or a flammable material will not be accepted.

C. Each dimmer module shall contain fully magnetic circuit breakers(s), solid state switching module(s), choke(s) and connectors.

D. Each dimmer must have the discreet capability to operate in a dimmed or a non-dimmed mode. This function shall be selectable from the control console or the rack-mounted keypad.

E. Each dimmer circuit shall use solid state switching devices consisting of two silicon controlled rectifiers in an inverse parallel configuration, snubber network and all required gating circuitry on the high voltage side of an integral opto-coupled control voltage isolator.

F. Dimmer modules shall include toroidal filters to reduce lamp filament sing and limit the radio frequency interference on line and load conductors. The current rise-time shall be not less than 500 microseconds measured at 90 degree conduction angle from 10-90% of the output wave-form with the dimmer operating at rated load.

G. Power efficiency shall be at least 97% at full load.

H. Dimmer shall accept hot-patching of an incandescent load up to the full capacity of the dimmer.

I. Dimmer output shall be regulated for incoming line voltage variations, except that the output voltage cannot be increased above a level equal to line voltage less dimmer insertion drop. Line regulation shall be +/- 1V over a 90-140 volt range for changes up to 10%. Load regulation shall be +/- 2V for 1-100% of rated current. Dimmers shall employ a scheme for compensation for harmonic distortion of the power line for any variation in load.

J. Response to control shall be less than 25 milliseconds.

2.6 ARCHITECTURAL CONTROL PROCESSOR UNIT

A. The auxiliary control processor unit shall support 32 wall stations or remote devices in any number of rooms. A maximum of 512 DMX dimmers may be assigned to one of 128 system control zones. A maximum of 250 presets and system events shall be allowed. The processor shall receive inputs from wall stations, lighting control consoles, Windows® based PCs, and/or third party devices. It shall process the information and distribute it to dimmer racks, building management systems, audio/visual systems, and/or other associated devices. A Windows® based configuration program shall allow patching dimmers to zones, with proportional levels and user selectable dimmer output curves; programming presets and system events; naming of presets and channels; and setting room and station assignments.

B. The processor unit shall be a microprocessor based, solid state device. The field programmable system configuration and program information shall be stored in Flash Memory, which does not require battery backup. Systems requiring battery backup memory shall not be acceptable. A PCMCIA socket shall be provided for system configuration and program information backup and update. Systems without a simple method of backup shall not be acceptable.

C. A DMX512 input shall be provided for snapshot input. This input shall accept level information from any DMX source. The DMX512 input shall be opto-isolated. Systems without opto-isolation shall not be acceptable.

D. A DMX512 output shall be provided. This output shall transmit level information to dimmers and other DMX devices.

E. An Echelon® Link Power™ network port shall be provided for communications with wall stations, remote interfaces, and other third party network devices. The Link Power network shall utilize polarity-independent, low-voltage Class II unshielded twisted pair (UTP) wiring, type

Belden 8471, or equivalent. The network topology may be bus, loop, home-run, or any combination of these three. Systems utilizing a proprietary low voltage station network shall not be acceptable.

F. In the event of power loss, the processor shall return to its last valid state when power is restored.

G. It shall be possible to record presets, consisting of any number of zones set to any level with an associated fade time. It shall be possible to recall a preset from a pushbutton, remote input, Astronomical Time Clock event (ATC), or macro.

H. A macro language shall allow sequences of presets and system events to be stored and recalled. Conditional arguments may be used within a macro to check time or input states. Macros may be assigned to pushbuttons, remote inputs, and/or ATC events.

I. An internal ATC shall allow presets and system events to be recalled at a preprogrammed time relative to sunrise or sunset or at a specific time of day. Systems not providing an internal ATC shall not be acceptable.

J. A room combine function shall allow adjacent sections of a dividable room to be combined or divided, such that their combined lighting may be controlled from any or all of their wall stations. Room combine functions may be assigned to pushbuttons remote inputs, macro, or ATC events.

K. A setup menu shall be provided with the processor. This menu shall be accessed using the LCD display and keypad of the CEM on which the processor is mounted. This menu shall provide basic setup functions. A Windows® based configuration program shall be provided for setup and programming of any size system. All functions of the system may be configured and monitored using this program. Configuration shall not be required in systems with only one room.

L. This unit shall be UNISON by ETC or Premiere 2200SE by Strand.

2.7 TOUCHSCREEN LCD CONTROL STATION

A. LCD stations shall contain a back-lit graphic Liquid Crystal Display (LCD) with a touchscreen interface. The LCD station shall provide a graphical user interface. The graphical user interface shall provide system configuration, programming, and playback displays.

B. The LCD station shall provide a means of configuring a single room system. This configuration shall include patching dimmers to zones and assigning profiles to zones.

C. The LCD station shall provide a means of programming the system. It shall be possible to program and edit presets and macros, with event timing, using the LCD station. It shall be possible to program and edit Astronomical Time Clock (ATC) events and assign presets and macros to ATC events using the LCD.

D. Room Combine configurations shall be controlled using the LCD. It shall be possible to import a bitmap image of a divisible room to be used as a graphical map for room combine functions.

E. It shall be possible to recall presets and macros from the LCD station. Zone levels shall also be directly controllable using the LCD.

F. All LCD functions shall be password protected, allowing several levels of security. If no password is assigned to a function, the password screen shall not appear.

G. LCD Touchscreen station shall be by ETC

2.8 ENTRY STATIONS

A. Stations shall consist of one programmable pushbuttons with integral green LEDs. These pushbuttons shall normally activate user programmable presets. The LEDs shall identify the active preset. When a preset is selected, the LED shall change to full intensity.

B. Entry stations shall be by ETC

2.9 DISTRIBUTION

A. DISTRIBUTION DESCRIPTION

1. Wiring devices shall be fabricated from 16 gauge cold rolled steel. Devices shall be properly cleaned, primed and painted with flat black baked enamel. Circuit numbers shall be 2" high adhesive backed black numbers on yellow background.
2. Individual pigtails and outlets shall be evenly spaced, on 12" centers in connector strips, or as otherwise specified. Where a circuit would fall on a joint it shall be moved 3" towards the junction box end of the strip.
3. Pigtails shall be three-wire type "SO" rubber jacketed cable sized for the circuit capacity. Connectors are 20A stage pin connectors. Internal wiring shall be sized to circuit capacity and terminated in feed through compression terminals at one end for ease of installation. Wire shall be rated at 125'.
4. Devices except for wall mounted boxes shall be supplied with appropriate hardware for mounting as shown on the drawings. Connector strips shall have brackets on 5' centers.
5. Wiring devices shall be UL Laboratories Listed.

B. CONNECTOR STRIPS

Provide two (2) cable strain relief grips and one (1) cable cradle for each section of multi-conductor cable. Units to be sized for proper fit and function.

2.10 WIRING PRODUCTS AND EQUIPMENT

A. Connector strips
1. Each Section shall consist of a 4”x4” 18 gauge steel wireway with removable cover sections fro access, labeled with circuit numbers
2. Each strip shall have terminal compartment which shall be factory installed on the right or left end as required and shall contain molded barrier type terminals for feed connection. The unit shall be provided with terminal strips for feed connections. Knockouts, cable clamps, and “Kellums” cable grips shall be provided when appropriate.
3. The strip shall be provided with heavy steel mounting straps on approximately 5’ center to grip up to 2” pipe.
4. Type S or SO 18” cable pigtails shall be secured by strain relief and shall be furnished with two pin and Ground “Stage Pin” connectors. Flush stage pin connectors shall be provided for work lights and as indicated. Internal wiring shall be rated at 125 degrees Centigrade
5. External Finish shall be black powder coat epoxy. The entire unit shall be UL labeled.

B. Gridiron Junction Boxes:
1. Each unit shall be surface mounted code gauge steel box located as shown on the drawings.
2. The unit shall be provided with terminal strips for feed connections. Knockouts, cables clamps and kellums cable grips shall be provided when appropriate. Access shall be by means of a removable cover. Finish shall be black baked enamel and entire unit shall be UL labeled.

C. Plug-in Boxes Flush Receptacles
1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female receptacles shall be stage pin type. Finish shall be baked flat enamel. The unit shall be UL listed.

D. Plug-in Boxes with Pigtails:
1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female receptacles shall be stage pin connector attached to 18” rubber covered cable pigtails. Finish shall be baked black enamel. The unit shall be UL listed.

E. Floor Pockets:
1. Flush mounted receptacle outlet assembly complete with receptacles.
2. Provide two 20A stage pin connector receptacles for connection to dimmer rack circuits
3. Provide one 20A duplex receptacle for connection to building circuits

4. Box: Steel minimum of 16 gauge by 10” deep
5. Cover Plate: Cast iron or cast aluminum with non skid safety tread surface and self closing door with cable notches.

2.11 DIMMING, CONTROLS, AND DISTRIBUTION BILL OF MATERIALS

POWER CONTROL SYSTEM TO CONSIST OF:

Sensor Dimming Rack to consist of:

2 **SR3-48** - Black Sensor3 48-Module Dimmer Rack - Designed for 3 phase 4 wire and ground operation at a maximum of 800A, 120/208V, 60Hz AC
2 **SR3-48 DOOR** - Black SR3-48 Locking Door with Filter
2 **CEM3** - CEM3 Control Module
1 SR3-48 to SR3-48 Bussing Kit (to be used only when bussing 2-SR48 racks together with no aux bay)
81 **D20** - Dual 20A Dimmer Module, 350ms rise time (162 Dimmers)
6 **R20AF** - Dual 20A Relay Module with Advanced Features (12 Relays)
9 **AFM** - Air Flow Module

ARCHITECTURAL CONTROL SYSTEM TO CONSIST OF:

Unison Paradigm External Processing Rack (ERn2) to contain:

1 **ERN2-W-120** - ERn2 Enclosure Wall-mount 100-120V
1 **P-ACP2** - Paradigm Architectural Control Processor
1 **P-SPM** - Paradigm Station Power Module - supports 32 stations and (1) 500m wire segment

Unison Paradigm Control Station to consist of:

2 **P-TS7-4** - Paradigm 7" Touchscreen Station to include:
- 7" Black Touchscreen Assembly
- Mounting Collar
- LinkConnect/ Ethernet termination kit

2 **P-LCD-FBB** - Paradigm flush mount touchscreen back box

Unison Heritage Control Station to consist of:

2 **UH10001-51** - White 1-gang faceplate assembly to include the following:
1 - "On/Off" Select Switch
2 **UH10001** - 1-gang, 1-button electronics assembly w/IR Port

Unison Heritage Control Station to consist of:

2 **UH30407-_Z** - Standard Color (color TBD) 3-gang faceplate assembly to include the following:
4 - Slider Assemblies
7 - Select Switches
Custom nomenclature to be determined
2 3-gang, 4-fader, 7-button electronics assembly w/IR Port

Additional Lighting Console Equipment

1 **FADW 2x20** Fader Wing 2 x 20 with power supply and dust cover

Power Distribution to include:

12 **Pipe mounted plug boxes** 4 circuit plug boxes with 36" pigtails with stage pin connectors

4 **Pipe mounted plug boxes** 2 circuit plug boxes with 36" pigtails with Edison connectors

3 **50' Connector strips** with 20 circuits on 20 pigtails with stage pin connectors and 4 circuits on flush Edison connectors. Each connector strip with 45' SO cable and grid iron junction boxes

6 **Drop Boxes** with 6 circuits with stage pin connectors and stage pin receptacles each box with 60' SO cable, grid iron junction boxes

Distributed DMX equipment to include

1 **Installation DMX repeater / optosplitter**

6 **Pipe mounted DMX output**

Electrical conduit, and wire for power and controls as required to hook up new architectural and DMX control systems

All connector strips, plug boxes, and other power distribution systems will be re-used with the new dimmer racks. All circuits will be checked for proper operation and terminations.

2.12 FXTURES

A. LED PROFILE FIXTURE (front of stage)

1 The ellipsoidal spotlights shall be the Color Source Spot LED as manufactured by Electronic Theatre Controls, Inc. Lamp Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.

2 Optical train shall combine a compact LED with a spherical lens to produce an optimum cosine field.

3 Spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.

4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles. Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. INCANDESCENT PROFILE FIXTURE (front of stage)

1 The ellipsoidal spotlights shall be the Source Four Ellipsoidal Spotlight as manufactured by Electronic Theatre Controls, Inc. Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.

2 Source Four's optical train shall combine a high efficiency lamp with a spherical lens to produce an optimum cosine field.

3 Source Four ellipsoidal spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the

reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.

4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles, Reflector secured with shock mounts, Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. LED COLOR WASH FIXTURE (Overstage)
   1. General
      a. The fixture shall be a color-mixing LED fixture with DMX control of intensity as well as color changing. The fixture shall be a Color Source LED PAR fixture as manufactured by Electronics Theatre Controls, Inc. or approved equal.
      b. All LED fixtures shall be provided by a single manufacturer to ensure compatibility.
      c. The fixture shall comply with USITT DMX-512 A.

C. CYC LIGHT
   1. General: the fixture shall be a compact, lightweight, color-mixing LED asymmetrical wash fixture with 8 or 16 bit DMX control of intensity and color.
   2. Fixture shall be equipped with Red, Green Blue & Amber 3 watt Luxeon K2 LED's.
   3. On board multi-voltage power supply; 100-240 VAC
   4. Feed thru data & power capabilities
   5. Compatible with DMX and RDM protocols
   6. Push button addressing
   7. Pre-programmed modes for fixed colors, timed color changes and strobes.
   8. Fixture shall be constructed of 18-gauge steel. Construction shall employ all corrosion-resistant materials and hardware. Product shall be free of pits and burrs.
   9. Physical: dimensions shall be 25" wide x 14" high x 6.4" deep. Weight: Approx: 18 lbs.
   10. Optional rigid steel yoke with locking dog tilt handle shall be available for overhead pipe mounting.
   11. ETL, cETL & CE listed
   12. Product shall be Altman Spectra Cyc 100 Made in the USA

D. WORK LIGHT
   1. General: the fixture shall be a compact, lightweight, WHITE LED HIGH BAY LIGHT wash fixture as manufactured by Big Ass Lights
   2. Fixture shall produce 10,000 lumens of white light and include a WIDE LMT diffused lens, yoke to hang on pipe batten, c-clamp and safety chain.
   3. Fixture shall be provided with 4' pigtail with Edison connector installed.

E. FIXTURES TO INCLUDE:

10 – ETC Source 4 LED Lustr+ Profile fixture with 19 degree lens tube.
10 – ETC Source 4 LED Lustr+ Profile LED fixture with 26 degree lens tube
10 – ETC Source 4 LED Lustr+ Profile fixture with 50 degree lens tube
25 – ETC Color Source PAR LED
7 – Altman Spectra Cyc 100 – LED cyclorama light
8 – BAL LED Work Light
All fixture provided with all cables, and accessories required for fully functioning system

3. INSTALLATION

3.1 GENERAL

A. Verify that job conditions are ready to receive work of this section. Notify Architect of any existing condition which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.

B. Verify that field measurements are as shown on shop drawings.

C. Verify that mechanical, electrical, and other items affecting work of this section are in place and ready to receive the work.

3.2 INSTALLATION

A. Install using skilled workmen in accordance with manufacturer's printed instructions and recommendations.

B. Install work in accordance highest industry standards. Handle materials to avoid dents and other damages.

C. Set and secure materials and components rigid, plumb, and square.

END OF SECTION

Section 11 61 00
Stage Equipment

PROPOSAL FORM FOR MEMORIAL HIGH SCHOOL

SUBMIT PROPOSAL TO **Rueben D Trevino**
Executive Director for Facilities, maintenance and operations
4309 Warrior Dr, Suite B
McAllen, TX 78501
956-661-6887 (office)
956-605-9296 (Fax)

Supplier Proposal of _____

Address _____
_____

Contact Information **Person** _____ **Phone** _____
FAX _____

PROPOSAL DUE BY JUNE 15, 2017 BY 2PM
PRICING MUST BE PROVIDED FOR EACH OF THE FOLLOWING SECTIONS.
McALLEN ISD MAY DETERMINE TO ACCEPT ALL OR PART OF THE SECTIONS TO FIT AVAILABLE FUNDS

COUNTERWEIGHT RIGGING SYSTEM _____

STAGE CURTAINS, TRACKS AND HARDWARE _____

THEATRICAL DIMMING AND CONTROLS INSTALLED _____

THEATRICAL LED FIXTURES INSTALLED _____

COMPLETE PACKAGE INSTALLED _____

PROPOSED BY _____
Signature of member of firm authorized to sign proposal

_____
Printed name of member signing proposal

TITLE _____

DATE _____

1. GENERAL REQUIREMENTS

1.1 RELATED DOCUMENTS: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 GOVERNING CLAUSE: For the sake of brevity these specifications shall omit phrases such as "Contractor shall furnish and install", "unless otherwise indicated or specified", etc., but these phrases are nevertheless implied. Mention of materials and operations requires the Contractor to furnish and install such materials and perform such operations completely to the satisfaction of the Owner.

1.3 SCOPE OF WORK: One company shall be responsible for the installation of all aspects of the stage equipment. Work under this section shall include the furnishing of all labor, materials, tools, transportation services, supervision, etc., necessary to complete installation of new stage equipment as well as any other items as herein listed, all as described in these specifications, as illustrated on the accompanying drawings; or as directed by the Architect or his Representative. The following are included in the stage equipment contractor's scope of work on this project:

- Remove existing dimmer rack and architectural controls
- Provide and install new control wire for architectural control stations, and DMX controls as needed
- Provide and install new dimmer rack and architectural control system
- Provide and install new stage lighting fixtures
- System commissioning and training

1.4 CONTRACTOR'S QUALIFICATIONS: The Contractor shall be fully experienced in the fabrication and installation of the stage equipment as herein specified. The Contractor shall have been in business for five (5) full years preceding the date of this bid doing work similar to the type specified and under the same name. The Contractor shall employ only fully trained stage riggers and mechanics for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Contractor and all directions given by him shall be as binding as if given by the Contractor.

1.5 SUBSTITUTIONS: Specific fabric and items of equipment are specified by trade names. It has been determined by the Owner that these are the particular items desired by the owner and established a standard of quality, equipment function and/or process. It is not the purpose nor intent of these documents to eliminate competitive bids. In order to allow proper and fair comparison of pricing, each contractor is required to submit their base bid price on the specified equipment. A contractor may submit an alternate bid based on equipment different from that specified only if that Contractor has received prior approval in writing from the Owner at least 10 days prior to bid. Accompanying each request shall be a letter specifically detailing each substitution including catalog data, specifications, swatches, operative samples, technical information, drawings, performance and test data, and complete descriptive and functional information to assist in a fair evaluation. Failure to submit any substitution for prior approval or not providing sufficient data for evaluation shall require the exact item specified to be furnished. Owner's approval of a substitution for bid purposes will not relieve the contractor from the responsibility of meeting all specification criteria. If an approval of a substitution is granted, the Contractor shall be fully responsible for any and all changes (wiring, power, distribution, support structure, etc.) such substitution shall require.

1.6 DEFECTIVE OR NON-APPROVED MATERIALS: Should any stage equipment be found defective, not meeting specifications, or that which has not been approved in writing by the Owner shall, upon discovery (including any time within the period of the guarantee), be replaced with the specified equipment or material at no additional cost.

1.7 **GUARANTEE**: The Contractor shall guarantee all of the work that is performed under this contract, including all materials, and workmanship, for a period of one (1) year from the date of full acceptance of the work. Lamps for lighting fixtures shall be guaranteed against failure for thirty (30) days. Nothing in this guarantee shall cause repair or replacement by the Contractor where negligence, neglect or improper operation by the Owner has caused the failure of any equipment installed under this contract.

1.8 **DISCREPANCIES**: All equipment shall be sized to fit properly. The exact measurements are the responsibility of the Contractor. If there are discrepancies in the specifications, the Contractor shall ask for a clarification from the Owner. If no clarification is requested, the Owner's judgment shall rule.

1.9 PRE-APPROVED STAGE EQUIPMENT CONTRACTORS

A. One company shall be responsible for the installation of all aspects of the stage equipment as specified in this section. This shall include but not be limited to all rigging, curtains, tracks, motors and control, stage lighting fixtures, stage/house dimming, and dimming controls and miscellaneous equipment. The following companies have prior approval as STAGE EQUIPMENT CONTRACTORS:

1. Texas Scenic Company, Inc.
2. AV Pro

B. In order to be considered as a Stage Equipment Contractor on this project, each Contractor requesting approval must submit to the Architect at least ten (10) days prior to the date of bid opening a letter expressing his intent to bid. This letter shall include a list of at least five (5) projects of similar size and scope completed by this firm within the last five (5) years. If motorized line-shaft rigging is required on this project, the letter shall indicate the number of line-shaft set provided and installed and the manufacturer of the equipment on each of the five projects. Inspection of one completed installation may be requested by the Architect/Architect's Representative prior to consideration of request to bid. Companies which have no experience in the installation and operation of line-shaft rigging will not be considered. The stage equipment contractor shall have been in business under the same name for five (5) full years preceding the date of this bid doing work similar to the type specified. The decision of the Architect as to the capability of the Bidder to successfully complete and maintain the system, based on this pre-qualification information shall be final.

C. Pre-Bid request letter shall include a statement that all major items of equipment shall be bid and supplied as specified, or shall contain details of all proposed substitute equipment for review by the Architect/Architect's Representative. Substitute equipment items to include specifications, parts numbers, and details of interconnection to proposed system. The decision of the Architect/Architect's Consultant as to the acceptability of substitute equipment shall be final.

D. The Stage Equipment Contractor shall employ only fully trained stage riggers and mechanics, assisted by common laborers, for the erection of the stage equipment. The stage riggers shall be completely familiar with the type of equipment to be installed. A competent Job Superintendent shall be on the job at all times when work is in progress. He shall represent the Stage Equipment Contractor and all directions given by him shall be as binding as if given by the Stage Equipment Contractor.

1.10 ACCEPTABLE RIGGING EQUIPMENT MANUFACTURERS

A. For the purposes of establishing a standard of quality desired on this project, the rigging hardware products of H & H Specialties, Inc. of South El Monte, California are specified. Other stage equipment hardware with prior approval for bidding shall be any and all companies (not an individual) that are contributing members or sustaining members in good standing with United States Institute of Theatre Technology (USITT) at the time of the bid will be considered. Specific items of hardware by any approved manufacturer must still meet the criteria established in these

specifications for those items. The rigging hardware products of other manufactures who are not members of USITT may not be used in the construction of this project.

B. Manufacturers whose equipment has prior approval to be used on this project include the following companies:

1. Texas Scenic Company, Inc.
2. H & H Specialties

1.11 DOCUMENTATION

A. **SHOP DRAWINGS:** Shop drawings and equipment data sheets shall be submitted to the Owner under general provisions within 45 days after award of the contract. Approval of submitted equipment shall be obtained prior to equipment purchasing or fabrication. If shop drawings are rejected, correct and resubmit in the manner as specified. All shop drawing information shall be submitted at the same time; no partial submittal will be accepted. Drawings shall indicate complete details, dimensions, product types and locations of all equipment, clearances required, guides, cables, sets, Contractor fabricated equipment, and all other details required to completely describe the work to be performed. Submittals drawings shall be presented at a scale of not less than 1/8" = 1'-0" for conduit plans, 1/4" for equipment layouts, ½" = 1'-0" for mounting details, and ½" = 1'-0" for plate and panel details. Each sheet to allow space for approval stamps and have the name of the project, the contractors and/or the supplier's name, address telephone number, and the date submitted. Submit the following items for Owner's approval, prior to fabrication:

1. Stage plan view
2. Stage side section view
3. Plan and elevation views indicating all electrical hardware locations and layout
4. Provide full dimensions for panel layouts with finishes and materials for all custom panels.
5. Details of installation and erection, including adjoining conditions and necessary clearances.
6. Indication by arrow and boxed caption of each variation from contract drawing and specifications, except those indicated as acceptable in specifications or on drawings

B. **RECORD DRAWINGS AND DATA:** Submit in accordance with General Provisions. Also within 30 days of final test and completion of the installation, submit the following to the Owner:

1. Three (3) complete sets of "as built and approved" drawings (rolled, not folded showing systems and elements as installed, including field modifications and adjustments.
2. Three (3) sets of maintenance data including a list indicating replacement parts lists for all items of equipment, wiring diagrams, control diagrams, any and all keys for cabinets, racks, key operated switches etc. and complete operation manuals.
3. Three (3) notarized Certificates of Flameproofing for each fabric used.
4. Three (3) Certificates of Guarantee
5. Electrical distribution drawing of the theatre in plan view (1/4" = 1'-0") indicating all electrical outlets and their corresponding circuit number dry-mounted to foam board and framed under non-glare glass and mounted on the wall in the control booth

C. **INSTRUCTION OF OWNER PERSONNEL**: This contractor or his representative, fully knowledgeable and qualified in systems operation, shall provide eight (8) hours of instruction to the Owner-designated personnel on the use and operation of this System. Designated instruction times shall be arranged through the Owner.

D. **PERMITS:** Obtain all permits necessary for the execution of any work pertaining to the installation, and conform in all trades with all applicable local codes and with the National Electric Code**.** Obtain all permits necessary for operation of any equipment by the Owner.

E. **CLEAN UP:** It shall be the responsibility of this Contractor to remove all debris from the building or site caused by his operations to a common trash point or receptacle on the job site, as determined by the Owner.

2. STAGE DIMMING AND CONTROL SYSTEM

2.1 Pipe Battens and Rigging – Refer to section 11060 for pipe battens. Coordinate battens required for the theatrical lighting and stage equipment supplier.

2.2 Electrical requirements of the Stage Equipment Contractor: The Stage Equipment Contractor shall be responsible for all stage lighting and dimming hardware as specifically detailed in these specifications. This shall include:

1. Furnishing all equipment specified (some to be given to Electrical Contractor for installation)
2. Hanging of connector strips on specified stage rigging hardware.
3. All control wire and installation of control wire including terminations of control systems
4. Set-up of the control console.
5. Demonstration of equipment to owner's representatives.
6. Any conduit for power and controls for theatrical lighting system
   a. Provide pull strings in conduit for control wire
7. Any power wiring
8. Power requirements and termination of same in dimmer rack and connector strips
9. Any load wiring, fixtures, or termination at fixtures for house lighting or emergency lighting
10. Mounting of plug boxes, floor pockets, back boxes and gridiron junction boxes (locations to be coordinated with stage equipment contractor)

2.3 FACTORY CHECK-OUT: This contract shall also include the services of a qualified engineer regularly employed by the manufacturer of the system who shall check the installation and ensure its proper operation. No part of the system shall be energized before being so checked and the installation approved. Failure to observe this provision shall automatically relieve the manufacturer of any responsibility concerning the proper operation of the system or any part thereof and the replacement of parts which may have been damaged by the premature energizing. This engineer shall be made promptly available on the job site within fourteen (14) days after the manufacturer has received written notice.

2.4 DIMMER RACKS

A. The installation rack shall be the Sensor as manufactured by Electronic Theatre Controls, Inc., or equal. The fully digital dimmer rack shall consist of up to 48 dimmer module spaces. Sensor rack systems shall be UL Listed and CSA Approved, and shall be so labeled when delivered to job site.

B. The dimmer rack shall be provided with wired spaces for all circuits. Dimmers shall be provided for all base circuits and blank modules provided for all expansion circuits. Provide base circuits indicated in bill of materials.

C. The dimmer racks shall house all dimmer modules, control electronics, and branch circuit breakers. Provide module and breaker quantities as indicated below. System shall have the performance features that follow.

1. Rack shall be UL Listed and labeled.
2. Rack shall employ dead front construction of code gage steel.
3. Each rack must have a hinged locking door.
4. Each rack must have an electrostatic air filter.
5. Ventilation shall be by a low-noise fan activated by DMX level data.
6. In the event of an over-temperature situation, each dimmer shall be shut down independently as required. Systems that shut the entire rack down upon over-temp will not be accepted.
7. Each 48-module dimmer rack shall be provided with a keypad and LCD display for rack configuration, backup and fault indication.

8. Each rack shall maintain active scene for a user-programmable period after loss of DMX-512 signal from console.
9. Standard control format shall be USITT DMX-512. Dimmer rack CEM must accept two independent DMX signals concurrently in a highest-takes-precedence manner for each dimmer.
10. Rack shall store a minimum of thirty-two user-programmable back-up looks which may be activated in case of loss of control signal.
11. Each dimmer must include discrete "boost" feature to allow over-voltage output to compensate for voltage drop in branch wiring and allow a true 120 volts at the fixture lamp or "trim" maximum voltage output to lengthen lamp life.
12. Each rack shall include a beacon which shall flash to indicate failures.

2.5 DIMMER MODULES

A. Dimmer modules shall be plug-in type. No more than two dimmers per module will be accepted.

B. Modules shall be assembled of aluminum or steel. Dimmer modules with housings manufactured of plastic or a flammable material will not be accepted.

C. Each dimmer module shall contain fully magnetic circuit breakers(s), solid state switching module(s), choke(s) and connectors.

D. Each dimmer must have the discreet capability to operate in a dimmed or a non-dimmed mode. This function shall be selectable from the control console or the rack-mounted keypad.

E. Each dimmer circuit shall use solid state switching devices consisting of two silicon controlled rectifiers in an inverse parallel configuration, snubber network and all required gating circuitry on the high voltage side of an integral opto-coupled control voltage isolator.

F. Dimmer modules shall include toroidal filters to reduce lamp filament sing and limit the radio frequency interference on line and load conductors. The current rise-time shall be not less than 500 microseconds measured at 90 degree conduction angle from 10-90% of the output wave-form with the dimmer operating at rated load.

G. Power efficiency shall be at least 97% at full load.

H. Dimmer shall accept hot-patching of an incandescent load up to the full capacity of the dimmer.

I. Dimmer output shall be regulated for incoming line voltage variations, except that the output voltage cannot be increased above a level equal to line voltage less dimmer insertion drop. Line regulation shall be +/- 1V over a 90-140 volt range for changes up to 10%. Load regulation shall be +/- 2V for 1-100% of rated current. Dimmers shall employ a scheme for compensation for harmonic distortion of the power line for any variation in load.

J. Response to control shall be less than 25 milliseconds.

2.6 ARCHITECTURAL CONTROL PROCESSOR UNIT

A. The auxiliary control processor unit shall support 32 wall stations or remote devices in any number of rooms. A maximum of 512 DMX dimmers may be assigned to one of 128 system control zones. A maximum of 250 presets and system events shall be allowed. The processor shall receive inputs from wall stations, lighting control consoles, Windows® based PCs, and/or third party devices. It shall process the information and distribute it to dimmer racks, building management systems, audio/visual systems, and/or other associated devices. A Windows® based configuration program shall allow patching dimmers to zones, with proportional levels and user selectable dimmer output curves; programming presets and system events; naming of presets and channels; and setting room and station assignments.

B. The processor unit shall be a microprocessor based, solid state device. The field programmable system configuration and program information shall be stored in Flash Memory, which does not require battery backup. Systems requiring battery backup memory shall not be acceptable. A PCMCIA socket shall be provided for system configuration and program information backup and update. Systems without a simple method of backup shall not be acceptable.

C. A DMX512 input shall be provided for snapshot input. This input shall accept level information from any DMX source. The DMX512 input shall be opto-isolated. Systems without opto-isolation shall not be acceptable.

D. A DMX512 output shall be provided. This output shall transmit level information to dimmers and other DMX devices.

E. An Echelon® Link Power™ network port shall be provided for communications with wall stations, remote interfaces, and other third party network devices. The Link Power network shall utilize polarity-independent, low-voltage Class II unshielded twisted pair (UTP) wiring, type

Belden 8471, or equivalent. The network topology may be bus, loop, home-run, or any combination of these three. Systems utilizing a proprietary low voltage station network shall not be acceptable.

F. In the event of power loss, the processor shall return to its last valid state when power is restored.

G. It shall be possible to record presets, consisting of any number of zones set to any level with an associated fade time. It shall be possible to recall a preset from a pushbutton, remote input, Astronomical Time Clock event (ATC), or macro.

H. A macro language shall allow sequences of presets and system events to be stored and recalled. Conditional arguments may be used within a macro to check time or input states. Macros may be assigned to pushbuttons, remote inputs, and/or ATC events.

I. An internal ATC shall allow presets and system events to be recalled at a preprogrammed time relative to sunrise or sunset or at a specific time of day. Systems not providing an internal ATC shall not be acceptable.

J. A room combine function shall allow adjacent sections of a dividable room to be combined or divided, such that their combined lighting may be controlled from any or all of their wall stations. Room combine functions may be assigned to pushbuttons remote inputs, macro, or ATC events.

K. A setup menu shall be provided with the processor. This menu shall be accessed using the LCD display and keypad of the CEM on which the processor is mounted. This menu shall provide basic setup functions. A Windows® based configuration program shall be provided for setup and programming of any size system. All functions of the system may be configured and monitored using this program. Configuration shall not be required in systems with only one room.

L. This unit shall be UNISON by ETC or Premiere 2200SE by Strand.

2.7 TOUCHSCREEN LCD CONTROL STATION

A. LCD stations shall contain a back-lit graphic Liquid Crystal Display (LCD) with a touchscreen interface. The LCD station shall provide a graphical user interface. The graphical user interface shall provide system configuration, programming, and playback displays.

B. The LCD station shall provide a means of configuring a single room system. This configuration shall include patching dimmers to zones and assigning profiles to zones.

C. The LCD station shall provide a means of programming the system. It shall be possible to program and edit presets and macros, with event timing, using the LCD station. It shall be possible to program and edit Astronomical Time Clock (ATC) events and assign presets and macros to ATC events using the LCD.

D. Room Combine configurations shall be controlled using the LCD. It shall be possible to import a bitmap image of a divisible room to be used as a graphical map for room combine functions.

E. It shall be possible to recall presets and macros from the LCD station. Zone levels shall also be directly controllable using the LCD.

F. All LCD functions shall be password protected, allowing several levels of security. If no password is assigned to a function, the password screen shall not appear.

G. LCD Touchscreen station shall be by ETC

2.8 ENTRY STATIONS

A. Stations shall consist of one programmable pushbuttons with integral green LEDs. These pushbuttons shall normally activate user programmable presets. The LEDs shall identify the active preset. When a preset is selected, the LED shall change to full intensity.

B. Entry stations shall be by ETC

2.9 DISTRIBUTION

A. DISTRIBUTION DESCRIPTION

1. Wiring devices shall be fabricated from 16 gauge cold rolled steel. Devices shall be properly cleaned, primed and painted with flat black baked enamel. Circuit numbers shall be 2" high adhesive backed black numbers on yellow background.
2. Individual pigtails and outlets shall be evenly spaced, on 12" centers in connector strips, or as otherwise specified. Where a circuit would fall on a joint it shall be moved 3" towards the junction box end of the strip.
3. Pigtails shall be three-wire type "SO" rubber jacketed cable sized for the circuit capacity. Connectors are 20A stage pin connectors. Internal wiring shall be sized to circuit capacity and terminated in feed through compression terminals at one end for ease of installation. Wire shall be rated at 125'.
4. Devices except for wall mounted boxes shall be supplied with appropriate hardware for mounting as shown on the drawings. Connector strips shall have brackets on 5' centers.
5. Wiring devices shall be UL Laboratories Listed.

B. CONNECTOR STRIPS

Provide two (2) cable strain relief grips and one (1) cable cradle for each section of multi-conductor cable. Units to be sized for proper fit and function.

2.10 WIRING PRODUCTS AND EQUIPMENT

A. Connector strips

1. Each Section shall consist of a 4"x4" 18 gauge steel wireway with removable cover sections fro access, labeled with circuit numbers
2. Each strip shall have terminal compartment which shall be factory installed on the right or left end as required and shall contain molded barrier type terminals for feed connection. The unit shall be provided with terminal strips for feed connections. Knockouts, cable clamps, and "Kellums" cable grips shall be provided when appropriate.
3. The strip shall be provided with heavy steel mounting straps on approximately 5' center to grip up to 2" pipe.
4. Type S or SO 18" cable pigtails shall be secured by strain relief and shall be furnished with two pin and Ground "Stage Pin" connectors. Flush stage pin connectors shall be provided for work lights and as indicated. Internal wiring shall be rated at 125 degrees Centigrade
5. External Finish shall be black powder coat epoxy. The entire unit shall be UL labeled.

B. Gridiron Junction Boxes:

1. Each unit shall be surface mounted code gauge steel box located as shown on the drawings.
2. The unit shall be provided with terminal strips for feed connections. Knockouts, cables clamps and kellums cable grips shall be provided when appropriate. Access shall be by means of a removable cover. Finish shall be black baked enamel and entire unit shall be UL labeled.

C. Plug-in Boxes Flush Receptacles

1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female receptacles shall be stage pin type. Finish shall be baked flat enamel. The unit shall be UL listed.

D. Plug-in Boxes with Pigtails:

1. This unit shall be a flush, surface or pipe mounted box as shown on the drawings. The back box shall be 18 gauge steel with two sets of knockouts on each side. Female receptacles shall be stage pin connector attached to 18" rubber covered cable pigtails. Finish shall be baked black enamel. The unit shall be UL listed.

E. Floor Pockets:

1. Flush mounted receptacle outlet assembly complete with receptacles.

2. Provide two 20A stage pin connector receptacles for connection to dimmer rack circuits
3. Provide one 20A duplex receptacle for connection to building circuits
4. Box: Steel minimum of 16 gauge by 10" deep
5. Cover Plate: Cast iron or cast aluminum with non skid safety tread surface and self closing door with cable notches.

2.11 DIMMING, CONTROLS, AND DISTRIBUTION BILL OF MATERIALS

Sensor Dimming Rack to consist of:

1 **SR3-48** - Black Sensor3 48-Module Dimmer Rack - Designed for 3 phase 4 wire and ground operation at a maximum of 800A, 120/208V, 60Hz AC
1 **SR3-48 DOOR** - Black SR3-48 Locking Door with Filter
1 **CEM3** - CEM3 Control Module
42 **D20** - Dual 20A Dimmer Module, 350ms rise time (84 Dimmers)
6 **R20AF** - Dual 20A Relay Module with Advanced Features (12 Relays)

1 **DRD12-24-120** - DRd12 100-120V Rack Enclosure - Designed for 3 phase 4 wire with ground operation at a maximum of 200A
1 **P-DRD-TK** - DRd Paradigm Termination Kit - Required for DRd with Paradigm processor
1 **P-ACP2** - Paradigm Architectural Control Processor
1 **P-SPM** - Paradigm Station Power Module - supports 32 stations and (1) 500m wire segment
12 **D20-** - Dual 20A 120V Dimmer Module, 350ms rise time (24 Dimmers)

ARCHITECTURAL CONTROL SYSTEM TO CONSIST OF:

Unison Paradigm Control Station to consist of:

2 **P-TS7-4** - Paradigm 7" Touchscreen Station to include:
- 7" Black Touchscreen Assembly
- Mounting Collar
- LinkConnect/ Ethernet termination kit

2 **P-LCD-FBB** - Paradigm flush mount touchscreen back box

Unison Heritage Control Station to consist of:

2 **UH10001-51** - White 1-gang faceplate assembly to include the following:
1 - "On/Off" Select Switch
2 **UH10001** - 1-gang, 1-button electronics assembly w/IR Port

Additional Lighting Console Equipment

1 **FADW 2x20** Fader Wing 2 x 20 with power supply and dust cover

Distributed DMX equipment to include

1 **Installation DMX repeater / optosplitter**
4 **Pipe mounted DMX output**
2 **Wireless DMX transmitter / receiver for motorized FOH position**

Electrical conduit, and wire for power and controls as required to hook up new architectural and DMX control systems

All connector strips, plug boxes, and other power distribution systems will be re-used with the new dimmer racks. All circuits will be checked for proper operation and terminations.

2.12 FXTURES

A. LED PROFILE FIXTURE (front of stage)
   1 The ellipsoidal spotlights shall be the Color Source Spot LED as manufactured by Electronic Theatre Controls, Inc. Lamp Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.
   2 Optical train shall combine a compact LED with a spherical lens to produce an optimum cosine field.
   3 Spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.
   4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles. Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. INCANDESCENT PROFILE FIXTURE (front of stage)
   1 The ellipsoidal spotlights shall be the Source Four Ellipsoidal Spotlight as manufactured by Electronic Theatre Controls, Inc. Source Four's high efficiency lamp shall utilize a compact tungsten filament contained in a krypton-filled quartz envelope. The lamp base shall be an integral die cast aluminum heat sink that reduces seal temperature and ensures proper lamp alignment.
   2 Source Four's optical train shall combine a high efficiency lamp with a spherical lens to produce an optimum cosine field.
   3 Source Four ellipsoidal spotlights are constructed of rugged, die cast aluminum, finished in black, high temperature epoxy paint. Tools are not required for either lamp alignment or cleaning the reflector or lens. Precision-tooled mechanical assemblies provide smooth operation, positive locking of adjustments and interchangeable components.
   4 Die cast aluminum housings, Integral cable clamp for power leads, Positive locking of lamp focus, Independent lamp alignment controls, High impact, thermally insulated knobs and shutter handles, Reflector secured with shock mounts, Rotating shutter assembly for keystone angles, Heavy gauge stainless steel shutters, Lens secured with silicone shock mounts, Interchangeable lens tubes for different fields, Teflon guides for smooth lens tube movement, Sturdy gel frame holders with two accessory slots, Top mounted, quick release gel frame retainer, Rugged steel yoke with two mounting positions, 300+ Rotation of fixture within yoke, Positive locking, hand operated yoke clutch, Optional iris, Optional slot for motorized pattern devices.

B. LED COLOR WASH FIXTURE (Overstage)
   1. General
      a. The fixture shall be a color-mixing LED fixture with DMX control of intensity as well as color changing. The fixture shall be a Color Source LED PAR fixture as manufactured by Electronics Theatre Controls, Inc. or approved equal.
      b. All LED fixtures shall be provided by a single manufacturer to ensure compatibility.
      c. The fixture shall comply with USITT DMX-512 A.

C. CYC LIGHT

1. General: the fixture shall be a compact, lightweight, color-mixing LED asymmetrical wash fixture with 8 or 16 bit DMX control of intensity and color.
2. Fixture shall be equipped with Red, Green Blue & Amber 3 watt Luxeon K2 LED's.
3. On board multi-voltage power supply; 100-240 VAC
4. Feed thru data & power capabilities
5. Compatible with DMX and RDM protocols
6. Push button addressing
7. Pre-programmed modes for fixed colors, timed color changes and strobes.
8. Fixture shall be constructed of 18-gauge steel. Construction shall employ all corrosion-resistant materials and hardware. Product shall be free of pits and burrs.
9. Physical: dimensions shall be 25" wide x 14" high x 6.4" deep. Weight: Approx: 18 lbs.
10. Optional rigid steel yoke with locking dog tilt handle shall be available for overhead pipe mounting.
11. ETL, cETL & CE listed
12. Product shall be Altman Spectra Cyc 100 Made in the USA

D. WORK LIGHT
1. General: the fixture shall be a compact, lightweight, WHITE LED HIGH BAY LIGHT wash fixture as manufactured by Big Ass Lights
2. Fixture shall produce 10,000 lumens of white light and include a WIDE LMT diffused lens, yoke to hang on pipe batten, c-clamp and safety chain.
3. Fixture shall be provided with 4' pigtail with Edison connector installed.

E. FIXTURES TO INCLUDE:

15 – ETC Color Source PAR LED

11 – Altman Spectra Cyc 100 – LED cyclorama light

All fixture provided with power and control cables, c-clamps, lenses, safety cables, and accessories required for fully functioning system

Theatrical LED fixtures to include

10 – ETC Source 4 LED Lustr+ Profile fixture with 19 degree lens tube.

10 – ETC Source 4 LED Lustr+ Profile fixture with 50 degree lens tube

20 – ETC Color Source PAR LED

7 – Altman Spectra Cyc 100 – LED cyclorama light

9 – BAL HIGH BAY LED Work Light

All fixture provided with all cables, and accessories required for fully functioning system

3. INSTALLATION

3.1 GENERAL

A. Verify that job conditions are ready to receive work of this section. Notify Architect of any existing condition which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.

B. Verify that field measurements are as shown on shop drawings.

C. Verify that mechanical, electrical, and other items affecting work of this section are in place and ready to receive the work.

3.2 INSTALLATION

A. Install using skilled workmen in accordance with manufacturer's printed instructions and recommendations.

B. Install work in accordance highest industry standards. Handle materials to avoid dents and other damages.

C. Set and secure materials and components rigid, plumb, and square.

END OF SECTION

Section 11 61 00
Stage Equipment

PROPOSAL FORM FOR NIKKI ROWE HIGH SCHOOL

SUBMIT PROPOSAL TO **Rueben D Trevino**
Executive Director for Facilities, maintenance and operations
4309 Warrior Dr, Suite B
McAllen, TX 78501
956-661-6887 (office)
956-605-9296 (Fax)

Supplier Proposal of _____

Address _____
_____

Contact Information **Person** _____ **Phone** _____
FAX _____

PROPOSAL DUE BY JUNE 15, 2017 BY 2PM
PRICING MUST BE PROVIDED FOR EACH OF THE FOLLOWING SECTIONS.
McALLEN ISD MAY DETERMINE TO ACCEPT ALL OR PART OF THE SECTIONS TO FIT AVAILABLE FUNDS

DEAD HUNG RIGGING AND PIPE GRID _____

STAGE CURTAINS, TRACKS AND HARDWARE _____

THEATRICAL DIMMING AND CONTROLS INSTALLED _____

THEATRICAL LED FIXTURES INSTALLED _____

COMPLETE PACKAGE INSTALLED _____

PROPOSED BY _____
Signature of member of firm authorized to sign proposal

_____
Printed name of member signing proposal

TITLE _____

DATE _____

INDEX OF DRAWINGS

CS - COVER SHEET
AD101 - McALLEN HIGH SCHOOL DEMOLITION PLAN
AD102 - MEMORIAL HIGH SCHOOL DEMOLITION PLAN
AD103 - JAMES "NIKKI" ROWE HIGH SCHOOL DEMOLITION PLAN
AE101 - McALLEN HIGH SCHOOL STAGE LIGHTING/
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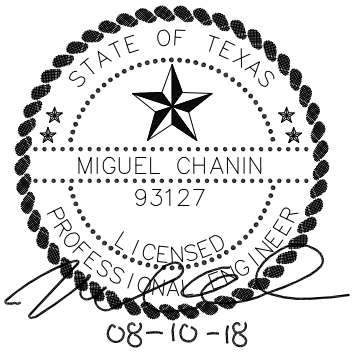
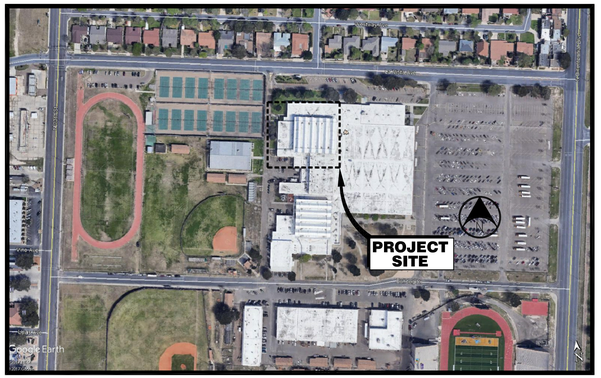
E1.01 - McALLEN HIGH SCHOOL ELECTRICAL POWER PLAN
E1.02 - MEMORIAL HIGH SCHOOL ELECTRICAL POWER PLAN
E1.03 - JAMES "NIKKI" ROWE HIGH SCHOOL ELECTRICAL POWER PLAN

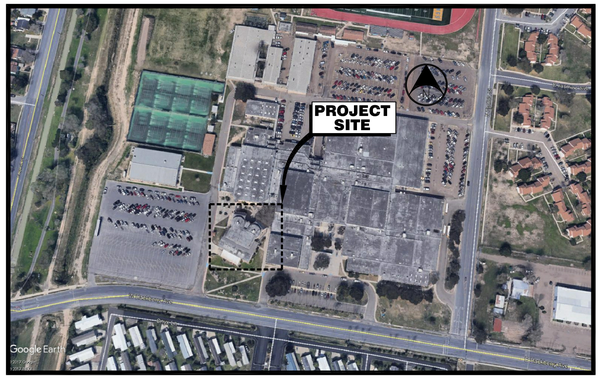


McALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE II FOR MEMORIAL, McALLEN, AND JAMES "NIKKI" ROWE HIGH SCHOOL

McALLEN, Texas



McALLEN HIGH SCHOOL
2021 La Vista Ave.
McAllen, Tx.



MEMORIAL HIGH SCHOOL
101 E. Hackberry Ave.
McAllen, Tx.

ROWE HIGH SCHOOL
2101 N. Ware Rd.
McAllen, Tx.

DRAWING INDEX

DRAWINGS

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AD101 - McALLEN HIGH SCHOOL DEMOLITION PLAN
AD102 - MEMORIAL HIGH SCHOOL DEMOLITION PLAN
AD103 - JAMES “NIKKI” ROWE HIGH SCHOOL DEMOLITION PLAN
AE101 - McALLEN HIGH SCHOOL STAGE LIGHTING/STAGE RIGGING LAYOUT
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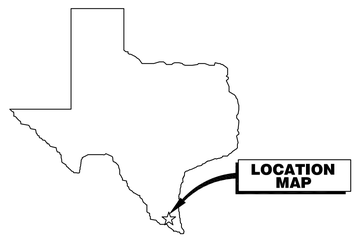
E1.03 - JAMES “NIKKI” ROWE HIGH SCHOOL ELECTRICAL POWER PLAN

VICINITY MAP N. T. S.



McALLEN, TEXAS

☆ SCHOOL BOARD ☆

DANIEL D. VELA	BOARD PRESIDENT
MARCO SUAREZ	VICE PRESIDENT
SAM SALDIVAR JR.	SECRETARY
DEBBIE CRANE ALISEDA	MEMBER
CONRADO ALVARADO	MEMBER
LARRY ESPARZA	MEMBER
TONY FORINA	MEMBER

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Rike • Ogden • Figueroa • Allex
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F. 956.687.3433
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CHANIN ENGINEERING, LLC
TBPE FIRM REG. NUMBER F-9369
PH: (956) 687-9421
FAX: (956) 687-3211
400 Nolana, Suite H2
McAllen, Texas 78504
www.chaninengineering.com

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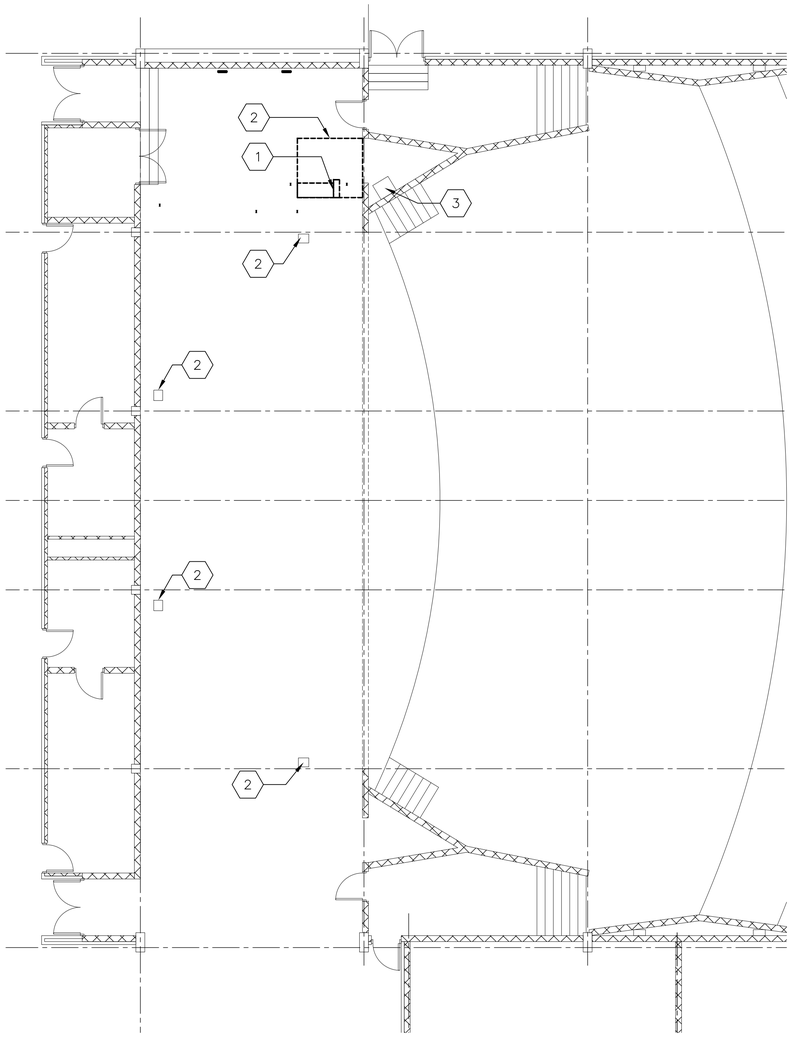
McALLEN INDEPENDENT SCHOOL DISTRICT
Facilities, Maintenance & Operations Department
4309 Warrior Drive, Suite B
McAllen, TX 78501
Office: (956)-632-3200 Fax: (956)-632-3645
WWW,MCAKKEBISD.ORG

M.E.P. ENGINEERING
HALFF®
5000 WEST MILITARY, SUITE 100
McALLEN, TEXAS 78503
TEL (956) 664-0286
FAX (956) 664-0282
TBPE FIRM #F-312

CS



DEMOLITION FLOOR PLAN

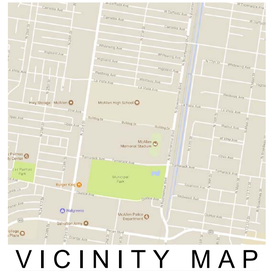
SCALE: ---------- 1/8" = 1' - 0"

GENERAL DEMOLITION NOTES:

1. AS-BUILT CONDITIONS HAVE BEEN DETERMINED FROM RECORD DRAWINGS (AS THEY EXIST), FIELD INVESTIGATIONS (ACCESSIBLE AREAS) AND DISCUSSIONS WITH MAINTENANCE PERSONNEL (WHERE AVAILABLE). THE DESIGN TEAM DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR AND ITS SUBCONTRACTORS ARE RESPONSIBLE FOR INVESTIGATING AS-BUILT CONDITION PRIOR TO ANY DEMOLITION AND/OR MODIFICATIONS. SHOULD THERE BE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/ENGINEER.
2. SCOPE OF WORK TO PROVIDE MAINTENANCE OF EXISTING STAGE EQUIPMENT, REPLACE EXISTING STAGE LIGHTING & LIGHTING CONTROLS SYSTEM.
3. PROVIDE ADDITIONAL SUPPORT AS NEEDED FOR DEAD HUNG BATTENS.

DEMOLITION KEYNOTES:

1. EXISTING DIMMER RACK AND ARCHITECTURAL CONTROLS TO BE REPLACED.
2. EXISTING FLOOR BOX TO REMAIN, REWIRE ACCORDINGLY.
3. EXISTING AUDIO/VIDEO EQUIPMENT TO REMAIN; PROTECT FROM DAMAGE.



VICINITY MAP

SCALE: ---------- NOT TO SCALE

NORTH

DESIGN BY:	DRAWING BY:	SCALE: AS INDICATED	DATE DRAWN:
DATE	REVISIONS		

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

REGISTERED ARCHITECT
LUIS A. FIGUEROA
12858
STATE OF TEXAS
8.10.18

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN HIGH SCHOOL

DRAWING NAME:
DEMOLITION PLAN

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1007 Walnut Ave.
McAllen, TX 78501
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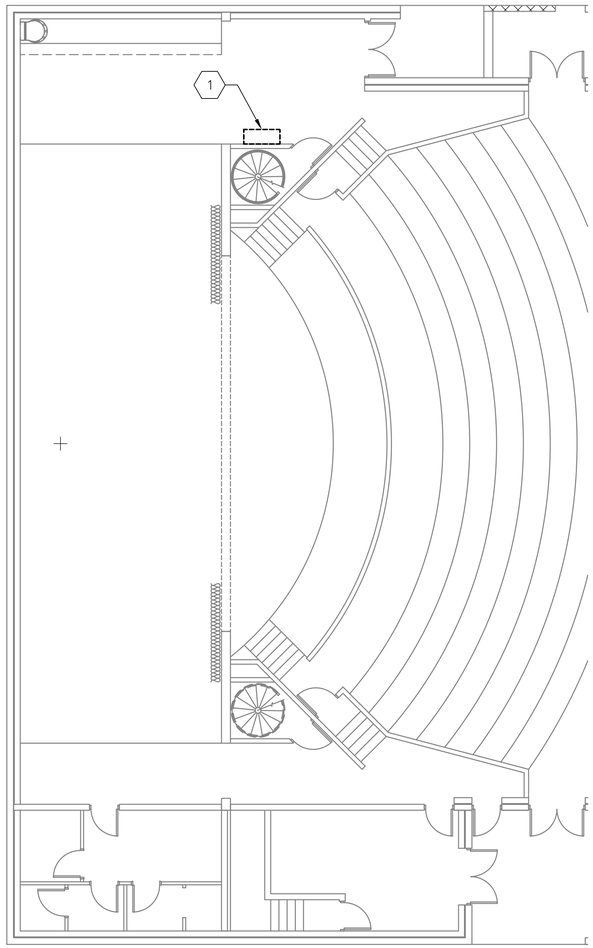
f\956 687 3433
www.rofainc.com
McAllen Harlingen

SHEET NO.
AD101
OF



DEMOLITION FLOOR PLAN

SCALE: ---------- 1/8" = 1' - 0"

GENERAL DEMOLITION NOTES:

1. AS-BUILT CONDITIONS HAVE BEEN DETERMINED FROM RECORD DRAWINGS (AS THEY EXIST), FIELD INVESTIGATIONS (ACCESSIBLE AREAS) AND DISCUSSIONS WITH MAINTENANCE PERSONNEL (WHERE AVAILABLE). THE DESIGN TEAM DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR AND ITS SUBCONTRACTORS ARE RESPONSIBLE FOR INVESTIGATING AS-BUILT CONDITION PRIOR TO ANY DEMOLITION AND/OR MODIFICATIONS. SHOULD THERE BE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/ENGINEER.
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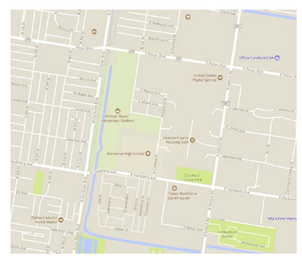
3. PROVIDE ADDITIONAL SUPPORT AS NEEDED FOR DEAD HUNG BATTENS.

DEMOLITION KEYNOTES:

1. EXISTING DIMMER RACK AND ARCHITECTURAL CONTROLS TO BE REPLACED.



VICINITY MAP

SCALE: ---------- NOT TO SCALE

NORTH

REVISIONS

DESIGN BY:	DRAWING BY:	SCALE: AS INDICATED	DATE DRAWN:
DATE			

McALLEN

INDEPENDENT SCHOOL DISTRICT

FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
MEMORIAL HIGH SCHOOL

DRAWING NAME:
DEMOLITION PLAN

REGISTERED ARCHITECT
LUIS A. FIGUEROA
12855
STATE OF TEXAS

8.10.18

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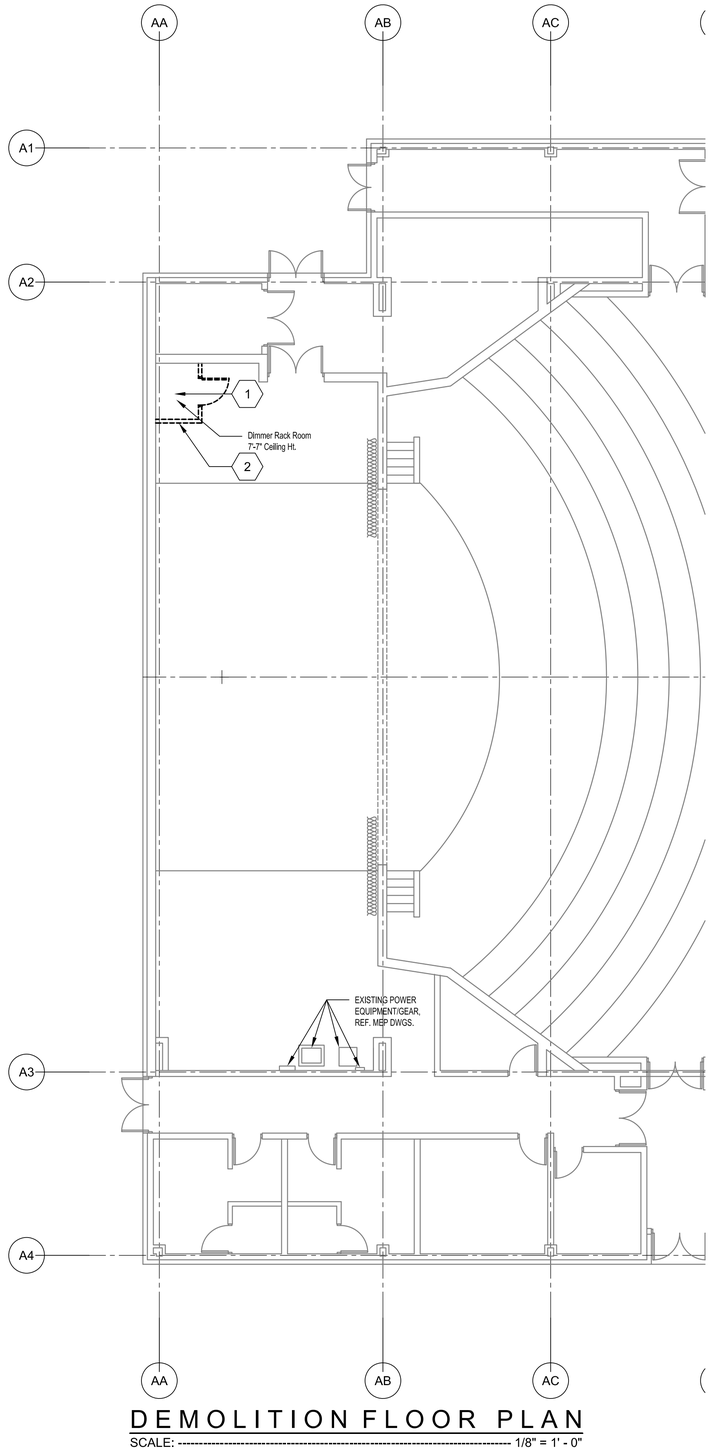
McAllen Harlingen

SHEET NO.
AD102
OF



DEMOLITION FLOOR PLAN

SCALE: ---------- 1/8" = 1' - 0"

GENERAL DEMOLITION NOTES:

1. AS-BUILT CONDITIONS HAVE BEEN DETERMINED FROM RECORD DRAWINGS (AS THEY EXIST), FIELD INVESTIGATIONS (ACCESSIBLE AREAS) AND DISCUSSIONS WITH MAINTENANCE PERSONNEL (WHERE AVAILABLE). THE DESIGN TEAM DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION. THE CONTRACTOR AND ITS SUBCONTRACTORS ARE RESPONSIBLE FOR INVESTIGATING AS-BUILT CONDITION PRIOR TO ANY DEMOLITION AND/OR MODIFICATIONS. SHOULD THERE BE ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/ENGINEER.
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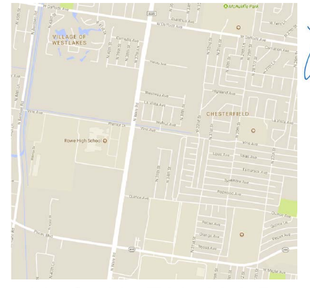
3. PROVIDE ADDITIONAL SUPPORT AS NEEDED FOR DEAD HUNG BATTENS.

DEMOLITION KEYNOTES:

1. EXISTING DIMMER RACK AND ARCHITECTURAL CONTROLS TO BE REPLACED.
2. REMOVE EXISTING BOOTH, COORDINATE WITH OWNER.



VICINITY MAP

SCALE: ---------- NOT TO SCALE

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DESIGN BY:
DRAWING BY:
SCALE: AS INDICATED
DATE DRAWN:

REVISIONS

NO.	DATE

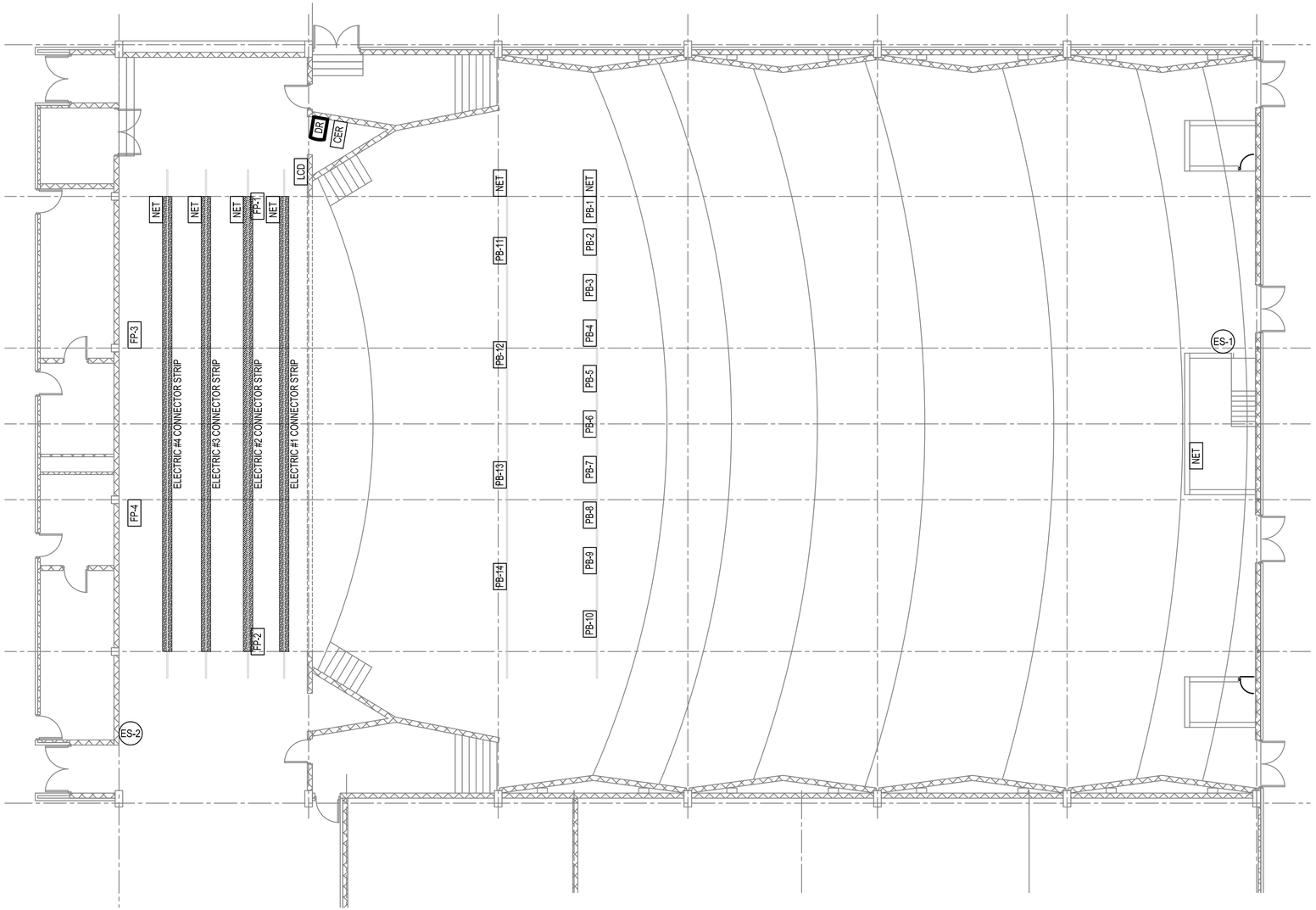
McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
JAMES "NIKKI" ROWE HIGH SCHOOL

DRAWING NAME:
DEMOLITION PLAN

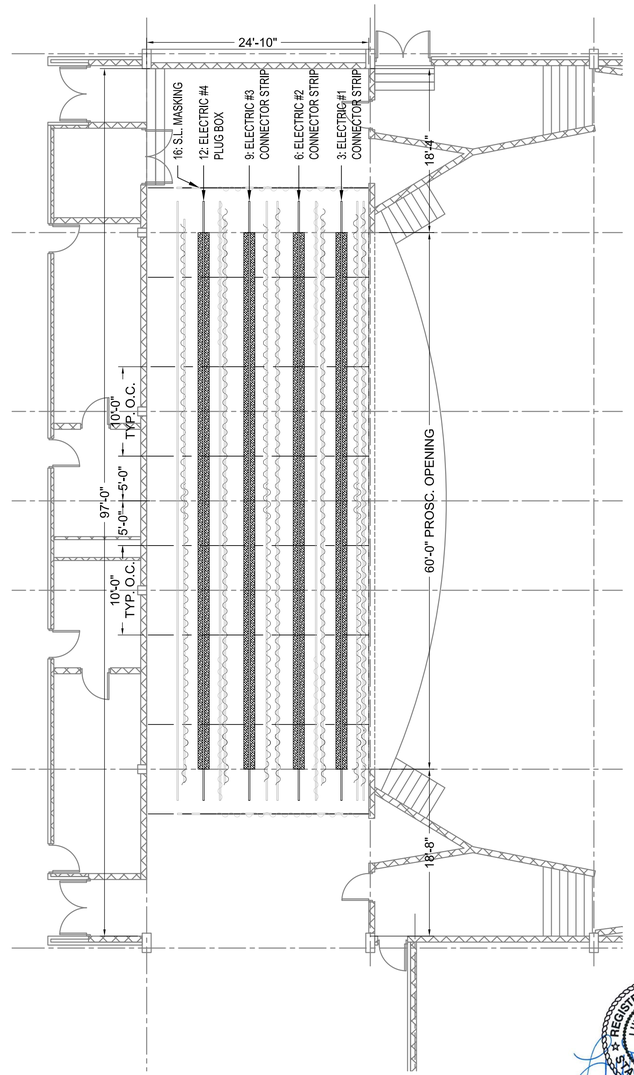
SHEET NO.
AD103
OF

LEGEND:	
DR	DIMMER RACK (1)
CER	CONTROL EQUIPMENT RACK (1)
NET	LIGHTING NETWORK TAP (7)
ES-#	ENTRY STATION (2)
FP-#	FLOOR POCKET (4)
LCD	LCD RECEPTACLE (1)
PB-#	PLUG BOX (11)



STAGE LIGHTING LAYOUT

SCALE: ----------1/8" = 1' - 0"



STAGE RIGGING LAYOUT

SCALE: ----------1/8" = 1' - 0"

REGISTERED ARCHITECT
LUIS A. FIGUEROA
12896
STATE OF TEXAS
8.10.18

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www.rofainc.com
McAllen Harlingen

NORTH

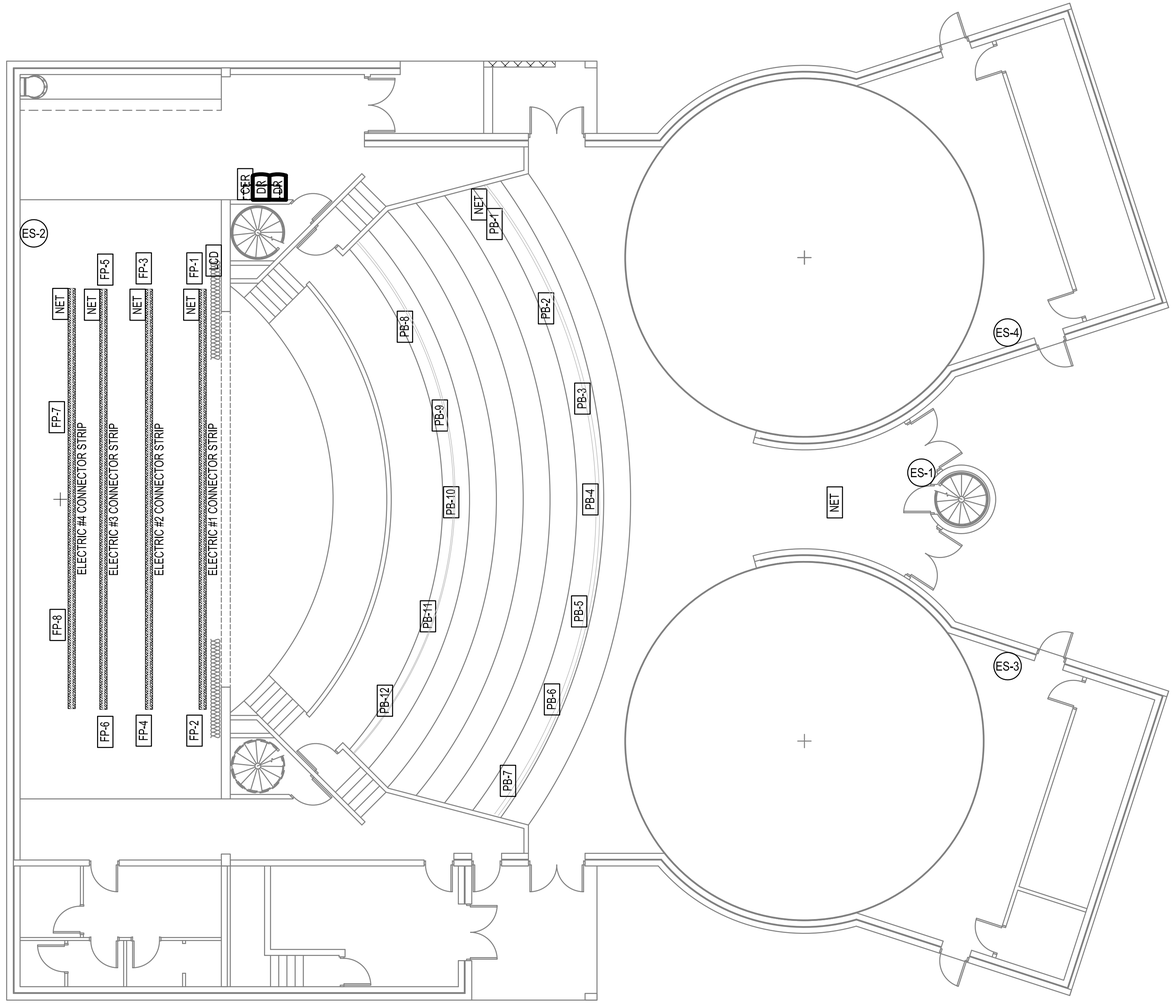
DESIGN BY:
DRAWING BY:
DATE
NO.
REVISIONS
SCALE: AS INDICATED
DATE DRAWN:

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN HIGH SCHOOL
DRAWING NAME:
STAGE LIGHTING & RIGGING

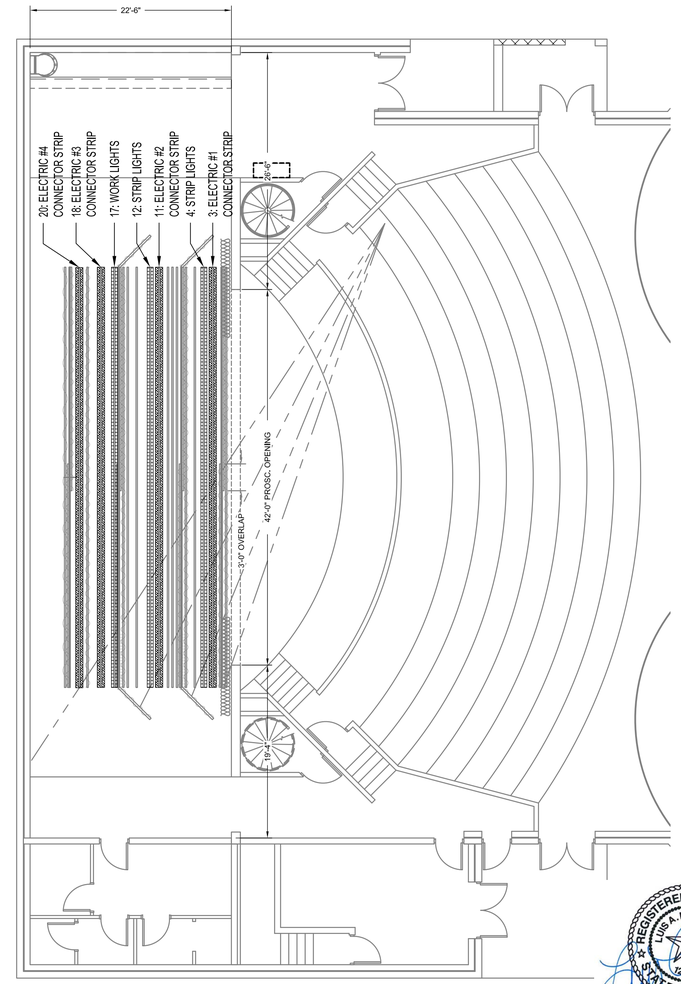
SHEET NO.
AE101
OF

LEGEND:	
DR	DIMMER RACK (1)
CER	CONTROL EQUIPMENT RACK (1)
NET	LIGHTING NETWORK TAP (7)
ES-#	ENTRY STATION (2)
FP-#	FLOOR POCKET (4)
LCD	LCD RECEPTACLE (1)
PB-#	PLUG BOX (11)



STAGE LIGHTING LAYOUT

SCALE: ----------1/8" = 1' - 0"



STAGE RIGGING LAYOUT

SCALE: ----------1/8" = 1' - 0"

REGISTERED ARCHITECT
LUIS A. FIGUEROA
12858
STATE OF TEXAS
8.10.18

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www.rofainc.com
McAllen Harlingen

NORTH

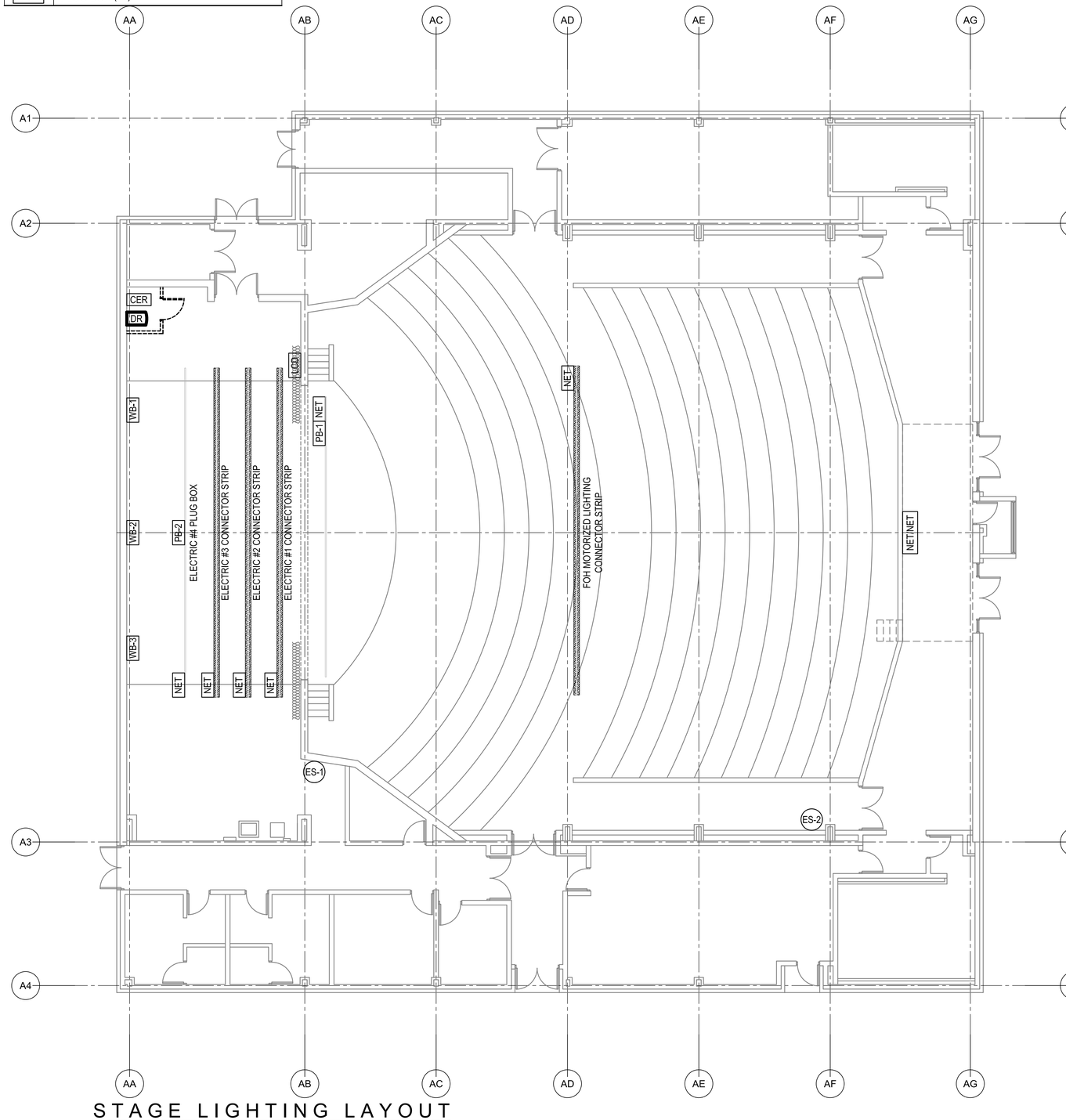
DESIGN BY:
DRAWING BY:
DATE
NO.
REVISIONS
SCALE: AS INDICATED
DATE DRAWN:

McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
MEMORIAL HIGH SCHOOL
DRAWING NAME:
STAGE LIGHTING & RIGGING

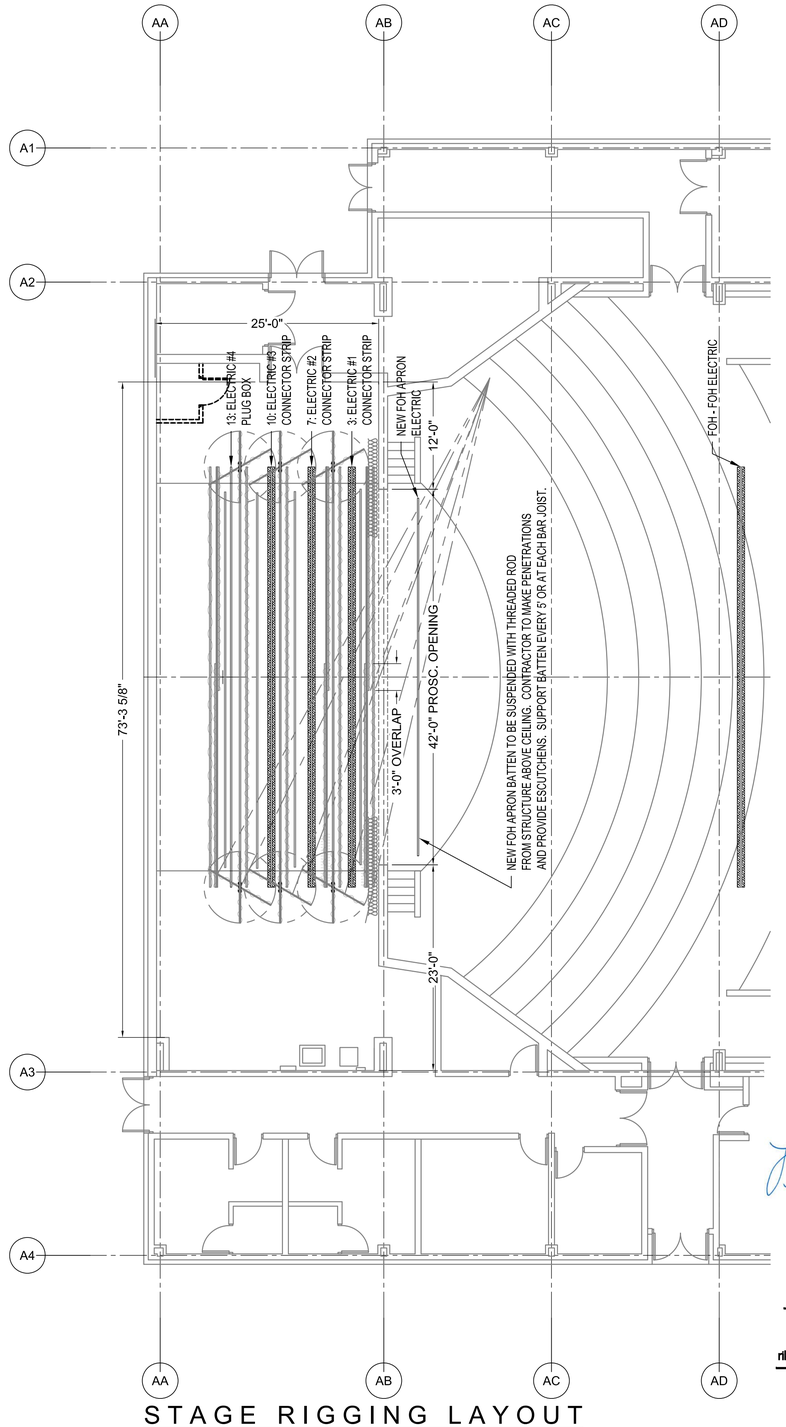
SHEET NO.
AE102
OF

LEGEND:	
DR	DIMMER RACK (1)
CER	CONTROL EQUIPMENT RACK (1)
NET	LIGHTING NETWORK TAP (7)
ES-#	ENTRY STATION (2)
FP-#	FLOOR POCKET (4)
LCD	LCD RECEPTACLE (1)
PB-#	PLUG BOX (11)



STAGE LIGHTING LAYOUT

SCALE: ----------1/8" = 1' - 0"



STAGE RIGGING LAYOUT

SCALE: ----------1/8" = 1' - 0"

NORTH

DESIGN BY:
DRAWING BY:
DATE
NO.
REVISIONS
SCALE: AS INDICATED
DATE DRAWN:

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
JAMES "NIKKI" ROWE HIGH SCHOOL
DRAWING NAME:
STAGE LIGHTING & RIGGING

REGISTERED ARCHITECT
LUIS A. FIGUEROA
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8.10.18

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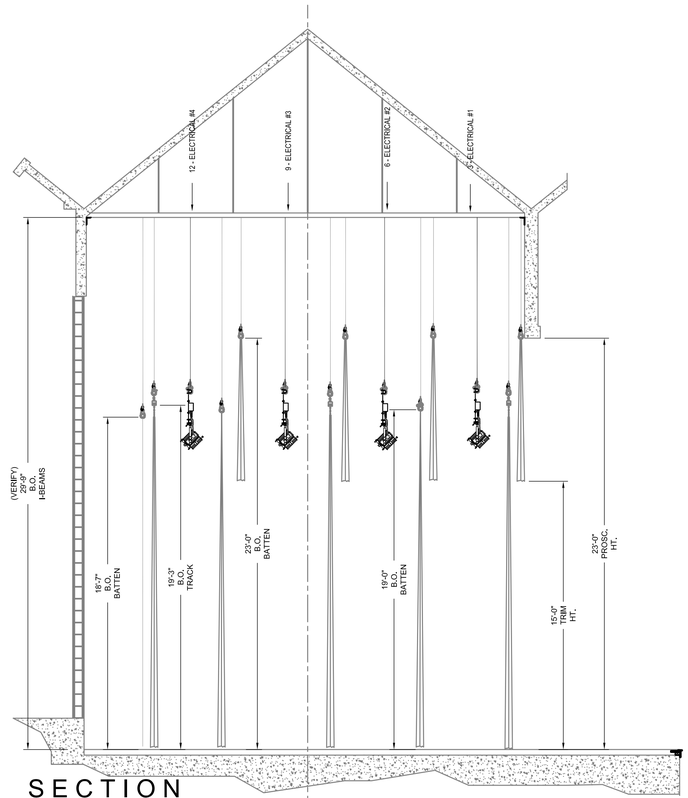
f(956) 687 3433
www.rofainc.com
McAllen Harlingen

SHEET NO.
AE103
OF



SECTION
SCALE: -------- 1/4" = 1' - 0"

DESIGN BY:
DRAWING BY:
SCALE : AS INDICATED
DATE DRAWN:

DATE	REVISIONS
NO.	

McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN HIGH SCHOOL
DRAWING NAME:
SECTION/ELEVATION

REGISTERED ARCHITECT
LUIS A. FIGUEROA
12856
STATE OF TEXAS
8.10.18

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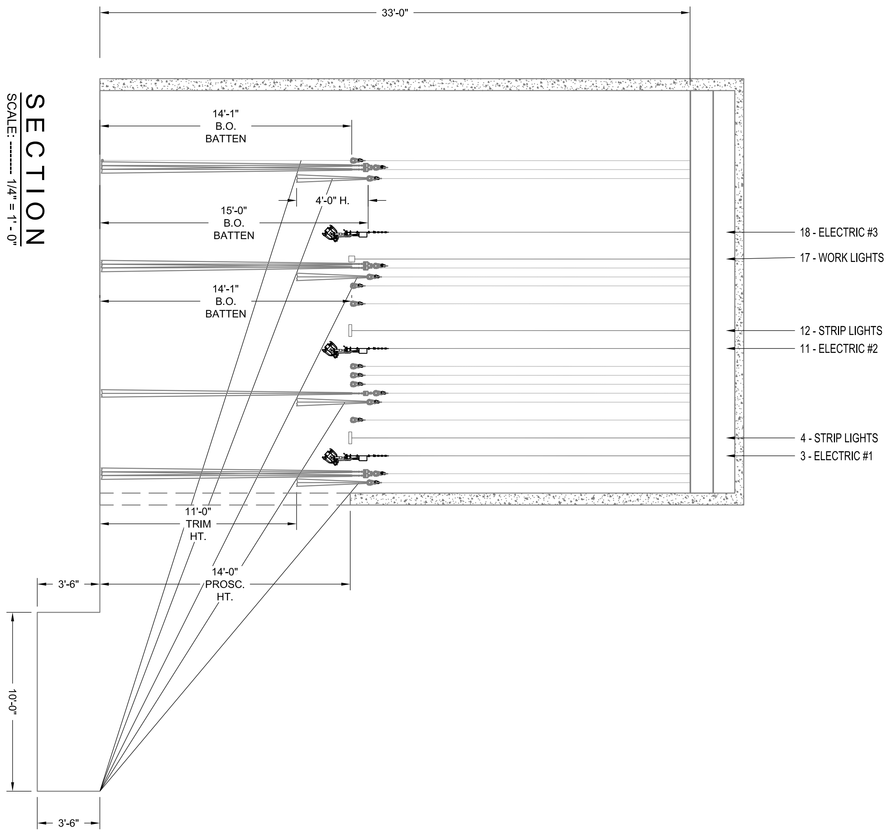
f:(956) 687 3433
www.rofainc.com
McAllen Harlingen

SHEET NO.
AE301
OF

SECTION
SCALE: ------- 1/4" = 1' - 0"



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f(956) 687 3433
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McAllen Harlingen

REGISTERED ARCHITECT
LUIS A. FIGUEROA
STATE OF TEXAS
8-10-18

SHEET NO.
AE302
OF

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
MEMORIAL HIGH SCHOOL
DRAWING NAME:
SECTION / ELEVATION

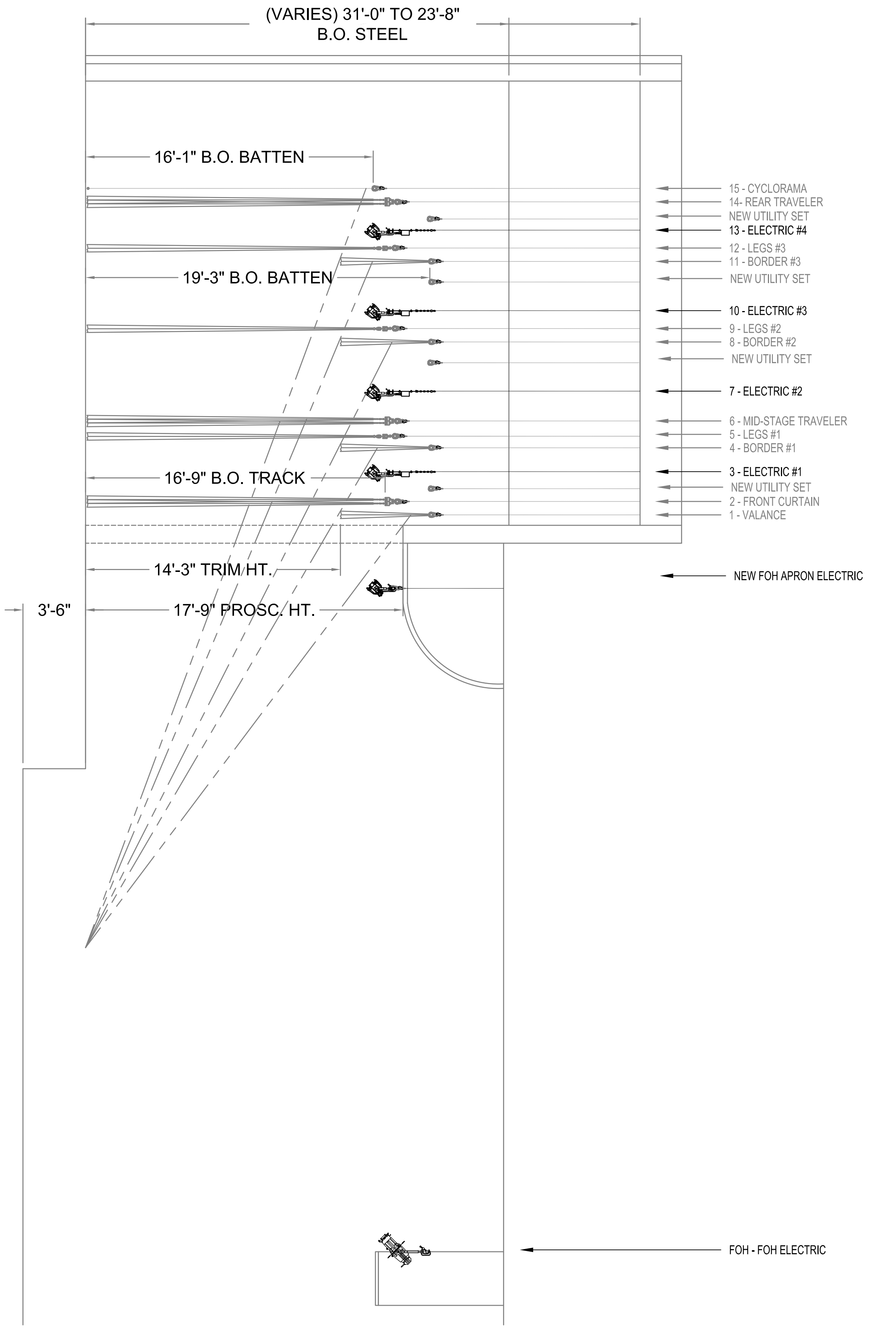
McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

DESIGN BY:	DRAWING BY:	SCALE : AS INDICATED	DATE DRAWN:
DATE	REVISIONS		
NO.			

SECTION/ELEVATION

SCALE: ..... 1/4" = 1' - 0"

FIELD VERIFY DIMENSIONS



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f(956) 687 3433
www.rofainc.com

McAllen Harlingen

REGISTERED ARCHITECT LUIS A. FIGUEROA 22855 STATE OF TEXAS

8.10.18

SHEET NO. AE303 OF

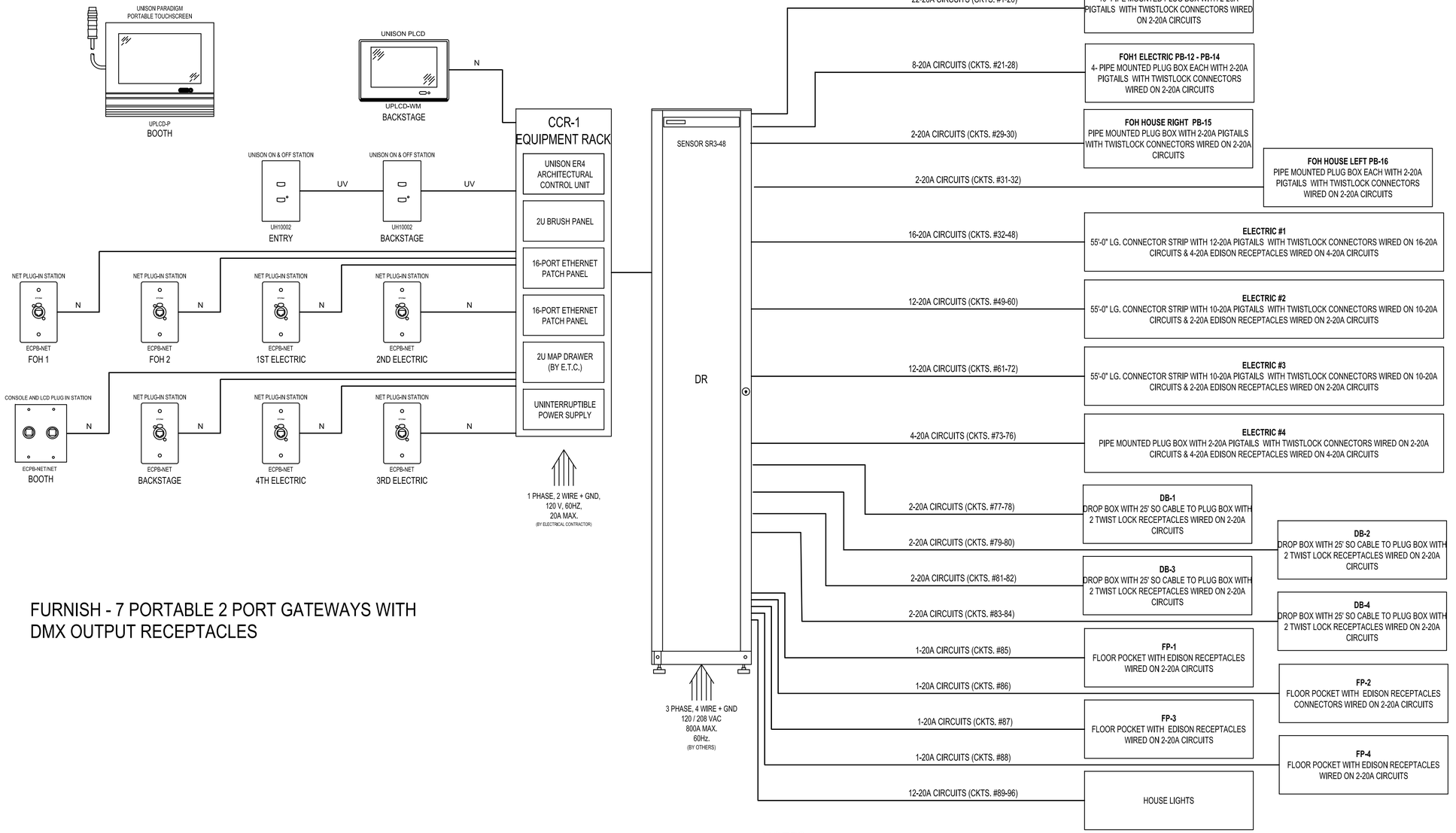
PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
JAMES "NIKKI" ROWE HIGH SCHOOL

DRAWING NAME:
SECTION / ELEVATION

McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

DESIGN BY:	DRAWING BY:	SCALE: AS INDICATED	DATE DRAWN:

DATE	REVISIONS
NO.	



FURNISH - 7 PORTABLE 2 PORT GATEWAYS WITH DMX OUTPUT RECEPTACLES

CONTROL WIRING LEGEND		
SYMBOL	*WIRE TYPE(S)*	*SIGNAL*
N*	(1) BELDEN #1583A	ETCNet
UV*	(1) BELDEN #8471 (1) #14 AWG. WIRE (2) #16 AWG. WIRES	UNISON (WITH +24V POWER)

LIGHTING RISER DIAGRAM

SCALE: ---------- NOT TO SCALE

ALTERNATE No-2: REPLACE DIMMER RACK.
ALTERNATE No-3: ADDITIONAL LIGHTING PACKAGE.

NOTES:

1.) ALL CONTROL WIRING IS PROVIDED BY OTHERS UNLESS NOTED OTHERWISE.

2.) TOTAL COMBINED LENGTH OF UNISON WIRING RUNS CANNOT EXCEED 1640 FEET (500 METERS).

3.) ALL ETCNet RUNS SHALL BE CONTINUOUS. UNSPLICED RUNS LESS THAN 300 FEET (90 METERS). ALL NETWORK CONNECTIONS TO BE IEEE T568B.

4.) ** - CIRCUIT NUMBERING MUST BE PROVIDED PRIOR TO MANUFACTURING.

5.) UNISON WIRING IS TOPOLOGY FREE.

REGISTERED ARCHITECT
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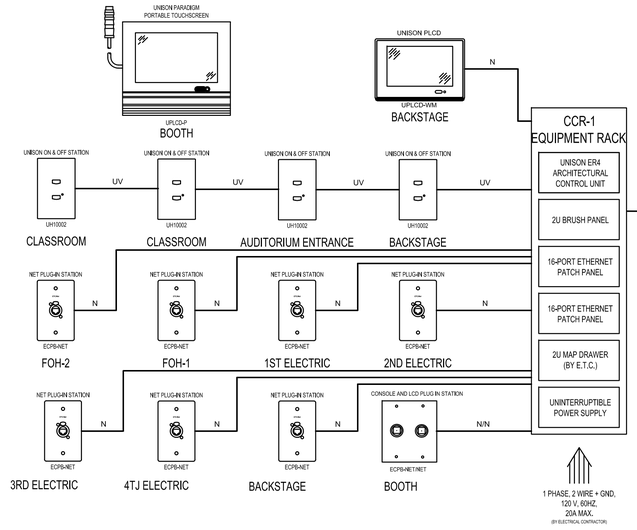
DESIGN BY:
DRAWING BY:
SCALE: AS INDICATED
DATE DRAWN:
DATE
NO.
REVISIONS

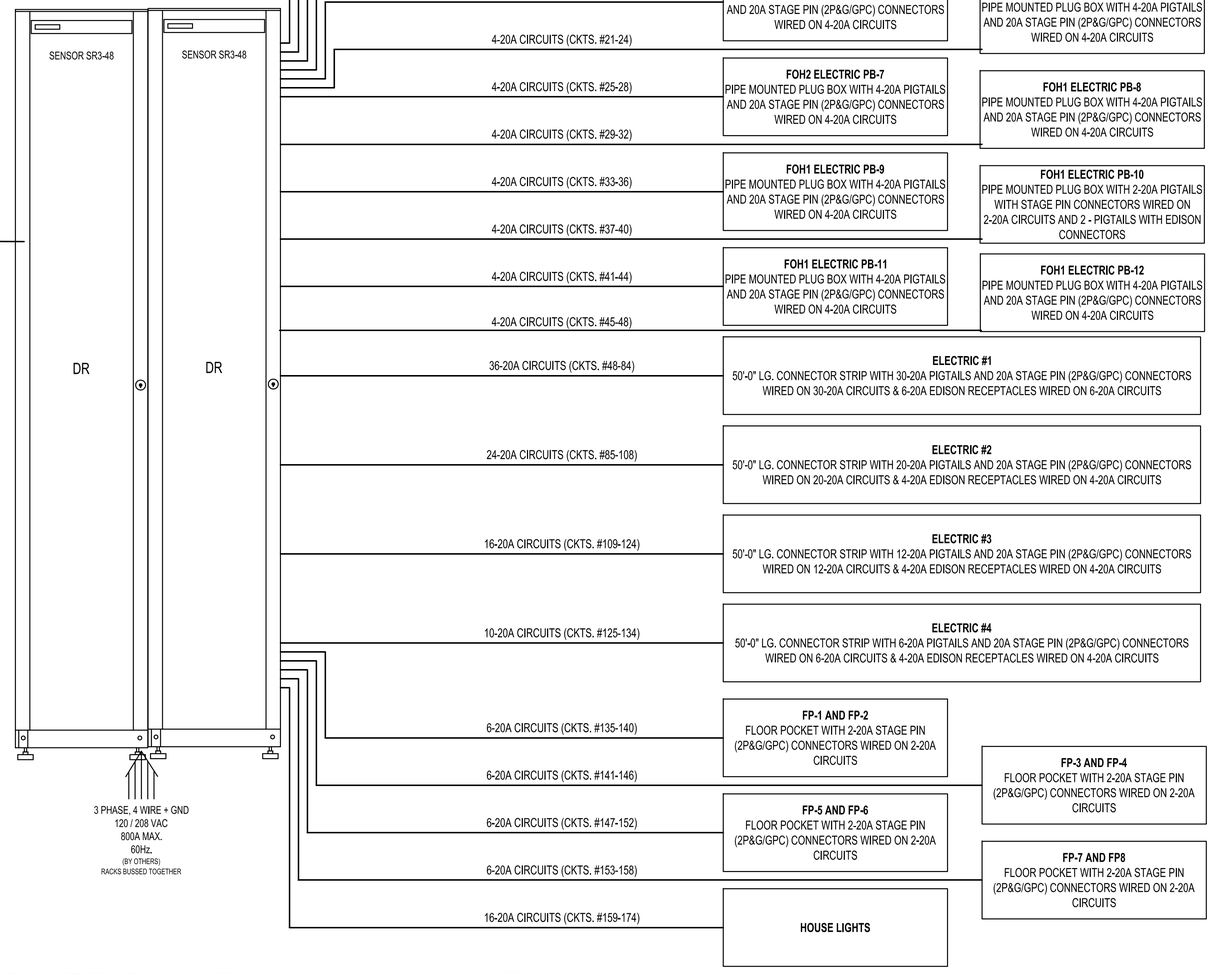
McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN HIGH SCHOOL
DRAWING NAME:
LIGHTING RISER DIAGRAM

SHEET NO.
EL001
OF



FURNISH - 7 PORTABLE 2 PORT GATEWAYS WITH
DMX OUTPUT RECEPTACLES



CONTROL WIRING LEGEND		
SYMBOL	*WIRE TYPE(S)*	*SIGNAL*
N*	(1) BELDEN #1583A	ETCNet
UV*	(1) BELDEN #8471 (1) #14 AWG. WIRE (2) #16 AWG. WIRES	UNISON (WITH +24V POWER)

LIGHTING RISER DIAGRAM

SCALE: ---------- NOT TO SCALE

ALTERNATE No-2: REPLACE DIMMER RACK.
ALTERNATE No-3: ADDITIONAL LIGHTING PACKAGE.

NOTES:

1.) ALL CONTROL WIRING IS PROVIDED BY OTHERS UNLESS NOTED OTHERWISE.
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4.) ** - CIRCUIT NUMBERING MUST BE PROVIDED PRIOR TO MANUFACTURING.
5.) UNISON WIRING IS TOPOLOGY FREE.

DESIGN BY:
DRAWING BY:
SCALE: AS INDICATED
DATE DRAWN:
REVISIONS
NO. DATE

McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
MEMORIAL HIGH SCHOOL
DRAWING NAME:
LIGHTING RISER DIAGRAM

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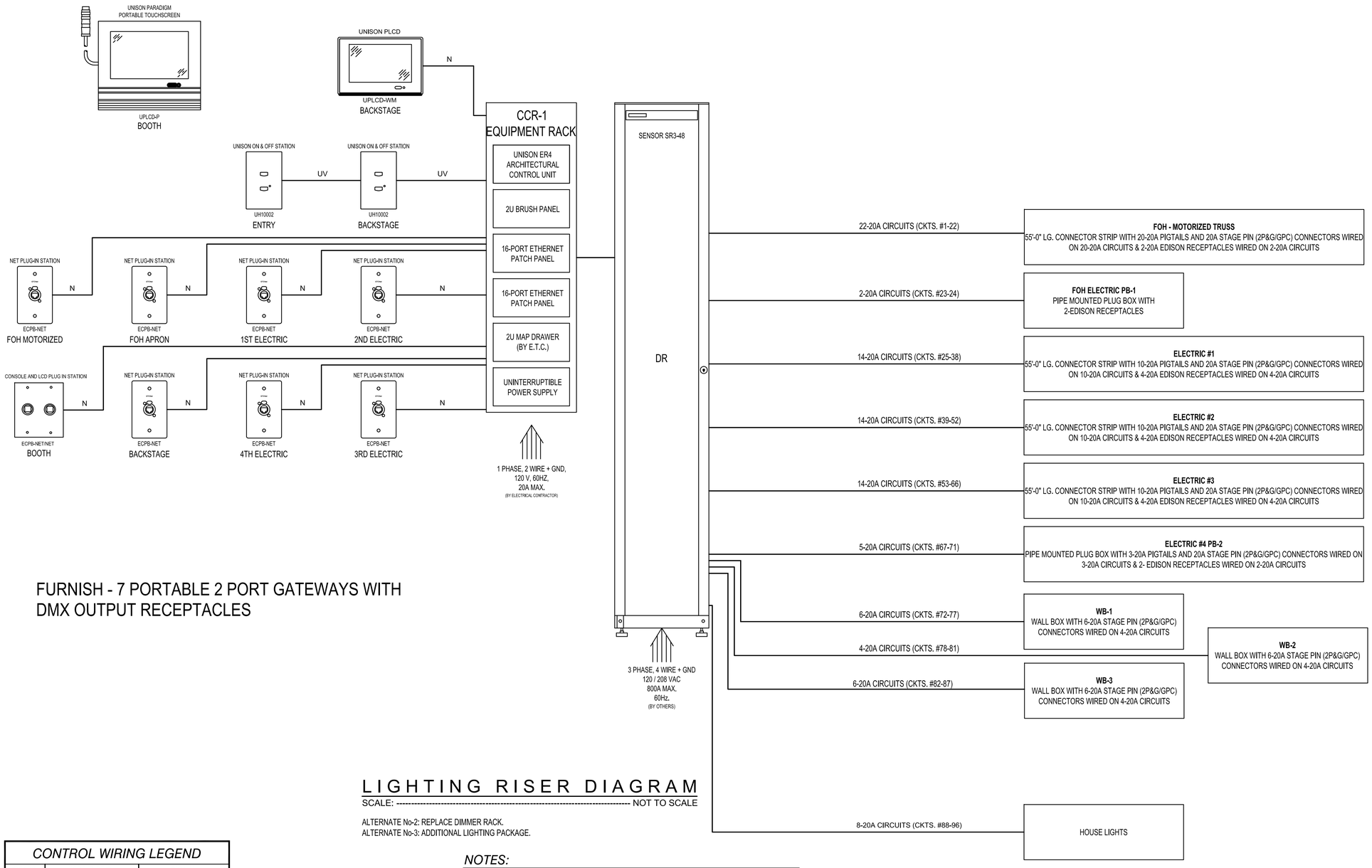
SHEET NO.
EL002
OF



FURNISH - 7 PORTABLE 2 PORT GATEWAYS WITH
DMX OUTPUT RECEPTACLES

LIGHTING RISER DIAGRAM

SCALE: ---------- NOT TO SCALE

ALTERNATE No-2: REPLACE DIMMER RACK.
ALTERNATE No-3: ADDITIONAL LIGHTING PACKAGE.

CONTROL WIRING LEGEND		
SYMBOL	*WIRE TYPE(S)*	*SIGNAL*
N*	(1) BELDEN #1583A	ETCNet
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NOTES:

1.) ALL CONTROL WIRING IS PROVIDED BY OTHERS UNLESS NOTED OTHERWISE.

2.) TOTAL COMBINED LENGTH OF UNISON WIRING RUNS CANNOT EXCEED 1640 FEET (500 METERS).

3.) ALL ETCNet RUNS SHALL BE CONTINUOUS. UNSPLICED RUNS LESS THAN 300 FEET (90 METERS). ALL NETWORK CONNECTIONS TO BE IEEE T568B.

4.) ** - CIRCUIT NUMBERING MUST BE PROVIDED PRIOR TO MANUFACTURING.

5.) UNISON WIRING IS TOPOLOGY FREE.

REVISIONS
DATE DRAWN:
SCALE: AS INDICATED
DRAWING BY:
DESIGN BY:
NO. DATE

McALLEN ISD
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER
EQUIPMENT IMPROVEMENTS PHASE 2
JAMES "NIKKI" ROWE HIGH SCHOOL
DRAWING NAME:
LIGHTING RISER DIAGRAM

REGISTERED ARCHITECT
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SHEET NO.
EL003
OF

ELECTRICAL GENERAL LEGEND

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION	MTG. HT. UNO (SEE NOTE 1)
^{K}	KEYED SWITCH	–
	DUPLEX RECEPTACLE – 20A/125V/1P/3W/G NEMA 5–20R	15" AFF
	MOTOR	–
30/–/3	DISCONNECT SWITCH – 30/–/3 INDICATES 30A, 3–POLE, NONFUSED; 30/30/3 INDICATES 30A, 3–POLE, 30A FUSE	AS REQD.
30/30/3	DISCONNECT SWITCH – 30/30/3 INDICATES 30A, 3–POLE, 30A FUSE	AS REQD.
DR	DIMMER RACK	–
	UNDERGROUND CONDUIT	–
	EXPOSED CONDUIT	–

NOTES:
1. 48" AFF INDICATES TO TOP OF DEVICE;
   15" AFF INDICATES TO BOTTOM OF DEVICE;
   ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.

ELECTRICAL GENERAL NOTES

A. ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID ALL PERMITS AND FEES REQUIRED.
B. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BID.
C. CONTRACTOR SHALL COORDINATE ALL WORK WITH THEATRICAL CONTRACTOR TO DISCONNECT AND RECONNECT EQUIPMENT
D. ANY WIRING EXTENSIONS REQUIRED TO RECONNECT WIRING INTERNAL TO DIMMER RACKS SHALL BE FURNISHED AND INSTALLED BY THEATRICAL EQUIPMENT INSTALLER.
E. CONTRACTOR SHALL CONFIRM ALL WIRE SIZES INDICATED AND ADVISE ENGINEER OF ANY DEVIATIONS PRIOR TO FINAL CONNECTIONS.

GENERAL ABBREVIATIONS

ABS	ABOVE BACK SPLASH
AFF	ABOVE FINISHED FLOOR
BFC	BELOW FINISHED CEILING
C	CONDUIT
CB	CIRCUIT BREAKER
CLG	CEILING
EC	EMPTY CONDUIT
EX	EXISTING
F	FUSE
G	GROUND (EQUIPMENT)
GFI	GROUND FAULT INTERRUPTER
H	HORIZONTAL MOUNTING
IC	INTERRUPTING CAPACITY
IG	ISOLATED GROUND
MTD	MOUNT OR MOUNTED
MTG	MOUNTING
NC (N.C.)	NORMALLY CLOSED
NF	NONFUSED
NIC	NOT IN CONTRACT
TYP	TYPICAL
EP	ELECTRICAL PRIMARY
NL	NIGHT LIGHT
NO (N.O.)	NORMALLY OPEN
RCPT(S)	RECEPTACLE(S)
PNL	PANEL
SO (S.O.)	SPACE ONLY
SP	SPARE
ST (S.T.)	SHUNT TRIP
SW	SWITCH
UF	UNDERFLOOR
UG	UNDERGROUND
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
UNO	UNLESS NOTED OTHERWISE

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8/10/18

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TBPE FIRM #F-312

DESIGN BY: T.D. | DRAWING BY: CHAVEZ | SCALE : AS SHOWN | DATE DRAWN: 8/10/2018

DATE	REVISIONS

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN ISD
McALLEN, TEXAS
DRAWING NAME:
ELECTRICAL GENERAL LEGEND
PROJECT No.
33259.001

SHEET NO.
E0.01
1 OF 4

File Name: i:\33000s\33259\001\CADD\E001-LG-33259.001.dwg
Current Tab (Layout): E0.01 ELECTRICAL GENERAL LEGEND User: AH2522
Printed Date: 8/10/2018 3:05:19 PM

GENERAL NOTES:

A. REFER TO E0.01 FOR GENERAL NOTES.

B. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND FIELD VERIFY EXISTING CONDITIONS.

DEMOLITION KEY NOTES: (#)

1. EXISTING DIMMER RACK TO BE DEMOLISHED.
2. DISCONNECT EXISTING ELECTRICAL FEEDER FROM DIMMING RACK LUGS AND DEMOLISH ELECTRICAL GUTTER.
3. DEMOLISH EXISTING OVERHEAD CONDUIT AND CIRCUIT WIRING BACK TO ELECTRICAL JUNCTION BOX. PROVIDE JUNCTION BOX WITH KNOCK-OUT COVER.

KEY NOTES: (#)

1. EXISTING STEP DOWN TRANSFORMER SERVING THEATER DIMMER RACK.
2. EXISTING ELECTRICAL FEEDER SERVING THEATER DIMMER RACK.
3. EXISTING ELECTRICAL PULL BOX.
4. PROVIDE NEW KNOCK OUT IN EXISTING ELECTRICAL PULL BOX AND STUB NEW FEEDER DOWN TO NEW DIMMER RACK LOCATION. MAKE FINAL CONNECTION.
5. PROVIDE WITH WARNING PLACARD ON NEW DIMMER RACK, PLACARD SHALL READ AS FOLLOWS: "WARNING: SCHOOL HAS TWO SEPARATE ELECTRICAL SERVICES. ELECTRICAL FEED TO THIS DIMMER RACK COMES FROM MDP LOCATED AT MECHANICAL ROOM AT NORTH EAST CLASSROOM WING ADDITION. ALL OTHER LOADS WITHIN AUDITORIUM ARE FED FROM MAIN ELECTRICAL SERVICE AT CHILLER PLANT ROOM." SUBMIT PLANS TO AHJ FOR APPROVAL PER NEC.
6. EXISTING LIGHT TRACK AND 2" PIPE BATON ABOVE STAGE TO BE LOWERED TO REPLACE BEAM. EXISTING CIRCUITS (9,11,19) AND LIGHTING CONTROL CIRCUITS SHALL BE REMOVED TO ALLOW FOR LOWERING OF TRACK AND PIPE; ELECTRICAL CIRCUITS AND LIGHTING CONTROL SHALL BE REINSTALLED IN SEPARATE EMT CONDUIT BY TEXAS SCENIC.

01 ELECTRICAL POWER PLAN
SCALE: 1/16" = 1'-0"

DESIGN BY: T.D.
DRAWING BY: CHAVEZ
SCALE : AS SHOWN
DATE DRAWN: 8/10/2018

DATE	REVISIONS

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE 2
McALLEN HIGH SCHOOL
McALLEN, TEXAS
DRAWING NAME:
ELECTRICAL POWER PLAN
PROJECT No.
33259.001

STATE OF TEXAS
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SHEET NO.
E1.01
2 OF 4

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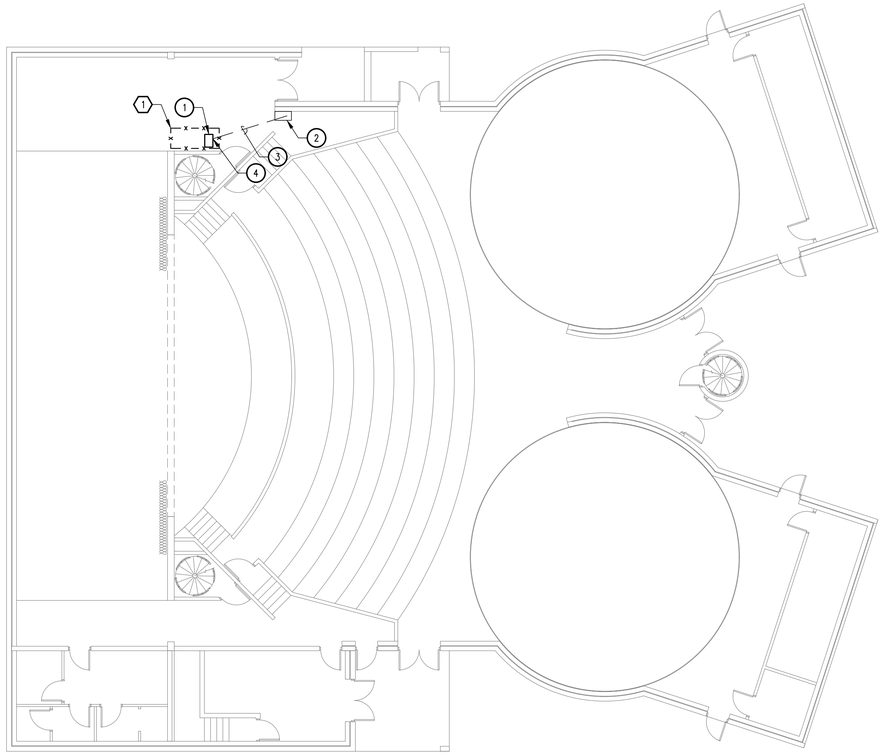
Printed Date: 8/10/2018 3:05:23 PM

GENERAL NOTES:

A. REFER TO E0.01 FOR GENERAL NOTES.

B. CONTRACTOR SHALL VERIFY ALL GROUNDS AND TAPE ALL GROUNDING CONDUCTORS GREEN.



DEMOLITION KEY NOTES:

1. EXISTING DIMMER RACK TO BE DEMOLISHED.

KEY NOTES: (1)

1. NEW DIMMER RACK, COORDINATE EXACT LOCATION WITH THEATRICAL CONSULTANT.
2. EXISTING DISTRIBUTION PANEL BOARD SERVING DIMMER RACK.
3. EXISTING 800A, 208V OVERHEAD FEEDER TO EXISTING DIMMER RACK TO REMAIN. EXISTING FEEDER SHALL SERVE NEW DIMMER RACK.
4. REINSTALL 90° CONNECTOR AND FEEDER TO NEW DIMMER RACK WITH TWO 3-1/2" FLEXIBLE CONDUITS. MAKE FINAL CONNECTION TO DIMMER RACK.

01 ELECTRICAL POWER PLAN

SCALE: 3/32" = 1'-0"

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TBPE FIRM #F-312

DESIGN BY: T.D. | DRAWING BY: CHAVEZ | SCALE : AS SHOWN | DATE DRAWN: 8/10/2018

REVISIONS

DATE

McALLEN INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE 2
MEMORIAL HIGH SCHOOL
McALLEN, TEXAS
DRAWING NAME:
ELECTRICAL POWER PLAN
PROJECT No.
33259.001

SHEET NO.
E1.02
3 OF 5

File Name: i:\33000s\33259\001\CADD\E102-EP-33259.001.dwg
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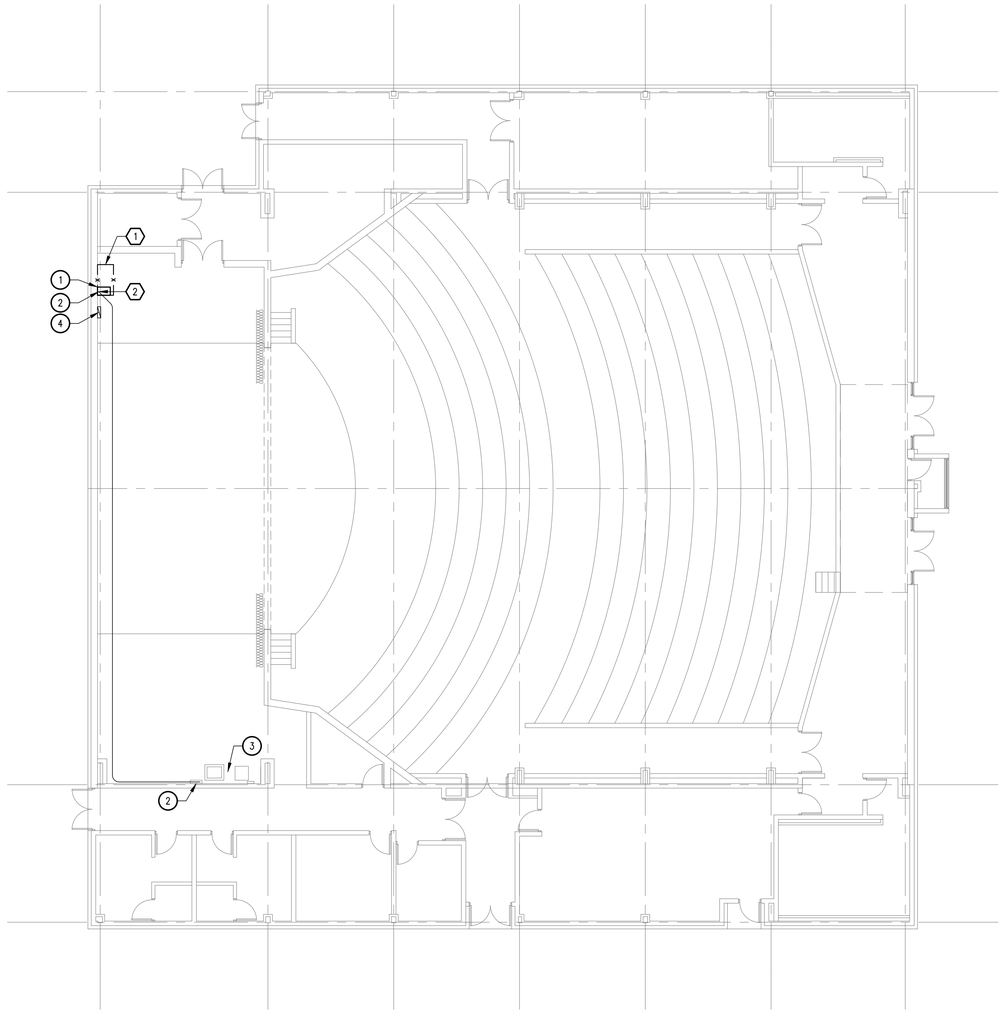
GENERAL NOTES:

A. REFER TO E0.01 FOR GENERAL NOTES.



01 ELECTRICAL POWER PLAN
SCALE: 3/32" = 1'-0"

DEMOLITION KEY NOTES:

1. EXISTING DIMMER RACK TO BE DEMOLISHED.
2. EXISTING OVERHEAD FEEDER CONNECTION TO EXISTING DIMMER RACK TO REMAIN. EXISTING FEEDER SHALL SERVE NEW DIMMER RACK.

KEY NOTES: (f)

1. NEW DIMMER RACK, COORDINATE EXACT LOCATION WITH THEATRICAL CONSULTANT.
2. CONNECT EXISTING OVERHEAD FEEDER TO NEW DIMMER RACK.
3. EXISTING 400A CUTLER HAMMER, 208V, FUSIBLE DISCONNECT TO REMAIN.
4. EXISTING PANEL 'LLA' TO REMAIN.

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DESIGN BY: T.D.	DRAWING BY: CHAVEZ	SCALE : AS SHOWN	DATE DRAWN: 8/10/2018
DATE	REVISIONS		

McALLEN
INDEPENDENT SCHOOL DISTRICT
FACILITY PLANNING SERVICES

PROJECT NAME
McALLEN ISD FINE ARTS THEATER EQUIPMENT IMPROVEMENTS PHASE 2
JAMES "NIKKI" ROWE HIGH SCHOOL
McALLEN, TEXAS
DRAWING NAME:
ELECTRICAL POWER PLAN
PROJECT No.
33259.001

SHEET NO.
E1.03
4 OF 4

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