

IDEA PUBLIC SCHOOLS

**SAFETY AND SECURITY
IMPROVEMENTS
VARIOUS CAMPUSES - RGV**

RIO GRANDE VALLEY, TEXAS

ARCHITECTS - PLANNERS

GMS Architects

Ethos Engineering

Set No.

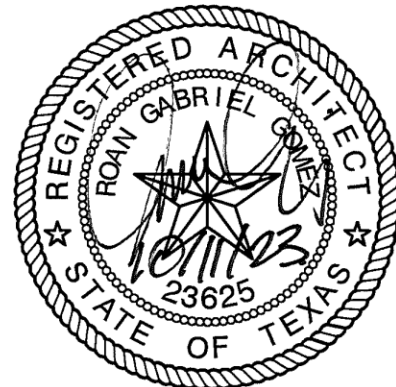


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In accordance with Board Resolution approved by the Board on August 14, 2020 the CEO/Superintendent appoints the Senior Vice President of Financial Planning, Vice President of Facilities and Construction and third-party consultant, Project Management Services Incorporated (PMSI) to constitute IDEA Public School's Construction Committee to select a construction methodology, issue proposals, rank proposals, and select the bidder providing best value to IDEA Public Schools for construction projects.

Contractor Ranking and Selection Approval Form

Date: 10/12/2023

Projects: IDEA Safety and Security Improvements – Various Campuses Rio Grande Valley

Construction Delivery Approach: Competitive Sealed Proposal (CSP), given the market is conducive for securing quality contractors when bidding this approach. This approach is a more cost-effective approach and is easier to manage from a funds-management and contracts standpoint than other delivery methods. The added risk of a lower quality subcontractor pool can be managed before award by 1) vetting subcontractors submitted by the contractor during the negotiation period, and 2) by adding subcontractor quality to the selection criteria.

Scoring Criteria and Weighting:

Pass/Fail Criteria

1. Ability to provide required insurance
2. Ability to meet the project schedule
3. Acceptable firm stability
4. History of excessive litigation
5. Conflicts of interest
6. Criminal conviction history
7. Substantive objections to the form of contract
8. Other legal status barring award of contract

Proposed Questions & Information for Each Pass/Fail Category:

1. List your insurance carrier(s) and confirm ability to meet the insurance requirements published in the Request for Proposals.
2. Confirm ability to meet the project schedule published in the Request for Proposals.
3. IDEA is interested in understanding the stability of your firm in terms of managed growth. Provide firm resources or a workload analysis based on gross billings for the prior 3 years and projecting through 2022 assuming that your firm is awarded this Project. The intent is to understand your firm's growth and trajectory and the company's ability to successfully manage projects based on historical and future trends. Provide documentation showing the number of years that the entity has been in business under the same legal name.
4. Provide a history of litigation your firm has been involved in during the past five years and the disposition of such litigation.
5. Provide the completed conflicts of interest form provided in the Request for Proposals.
6. Provide the completed criminal conviction form provided in the Request for Proposals.
7. Review and acknowledge the contract in Exhibit E and list any objections or modifications to the contract form.
8. Confirm that your firm is legally able to conduct business in the State of Texas and enter into construction contracts involving public funds.

Weighted Scoring Criteria

1. Firm Experience/Key Personnel and Firm Stability/Management **(30 Points)**
2. Proposed subcontractor team (submitted 48 hours after bid opening) **(10 Points)**
3. Cost **(60 Points)**

Proposed Questions & Information for Each Scoring Category:

Relevant Firm Experience, Key Personnel, and Ability to Complete the Work (30 Points)

1. Include an organizational chart for your proposed management team. The proposed team will be evaluated based on their relevant experience and qualifications. Include, at a minimum, the name of the principal-in-charge for the firm as well as the following staff: project manager (primary decision maker), superintendent(s). The project manager may have other roles, such as project superintendent, but must be on-site full time. Staffing strength is of significant importance to IDEA Public Schools. **10 points**
2. Provide information on a minimum of five projects of comparable type, size, and quality that your firm has completed in the last three years. Identify similar challenges and describe your approach. Regarding these projects, identify which staff members were on the featured projects, along with names and contact information for the related Owner or Architect. **10 points**
3. Describe how your firm’s quality control team will measure the quality of construction and commissioning and how will you address non-conforming work. **5 points**
4. Describe your firm’s approach to warranty service implementation. **5 points**

Proposed Subcontractor Team (10 Points)

Within 48 hours of the proposal deadline, submit a list of proposed subcontractors for the different trades of work. **10 points**

Cost (60 Points)

Points will be awarded based on Offerors’ ratio to the lowest price received. Points will be awarded based on the following formula: $\text{Lowest Bid} / \text{Proposer's Bid} \times 50 = \text{Points Received}$. As an example, the following sample scoring matrix is provided:

Proposer	Offeror’s Proposed Cost	Calculation	Assigned Point Value
Contractor 1	\$2,500,000	$\$2,500,000 / \$2,500,000 \times 60 =$	60
Contractor 2	\$2,700,000	$\$2,500,000 / \$2,700,000 \times 60 =$	56
Contractor 3	\$2,800,000	$\$2,500,000 / \$2,800,000 \times 60 =$	54
Contractor 4	\$2,900,000	$\$2,500,000 / \$2,900,000 \times 60 =$	52
Contractor 5	\$3,000,000	$\$2,500,000 / \$3,000,000 \times 60 =$	50

IDEA Chief Financial Officer

IDEA VP of Facilities and Construction

DOCUMENT 001000
REQUEST FOR COMPETITIVE SEALED PROPOSALS

IDEA Public Schools Board, in accordance of Texas Education Code Chapter 44, Subchapter B and Chapter 2269 of the Texas Government Code, has delegated to its Construction Committee of the Board the authority of the selection of procurement method, determining the evaluation/ranking criteria, ranking of respondents, selection of the respondent that will provide best value to the the District. The Board desires to delegate to the CEO/Superintendent (or her designee) the authority to negotiate a contract with the selected respondent. The Chief Executive Officer has elected to utilize the Competitive Sealed Proposal procurement process. Furthermore, The Board has delegated the authority to open proposals to the Architect/Engineer of Record. Competitive Sealed Proposals will be received from qualified General Contractor Proposers for the entire scope of Work described below in accordance with Proposal Documents, and Addenda as may be issued, by IDEA Public Schools, until the date and time fixed for the Proposal Opening, as identified below:

OWNER: IDEA Public Schools – 2115 W Pike Blvd. Weslaco Tx 78596.

ARCHITECT: Gomez Mendez Saenz, Inc. – 1150 Paredes Line Rd., Brownsville, Texas 78521 Representative: Roan G. Gomez, AIA, (956) 546-0110
rgg@gmsarchitects.com

PROJECT & LOCATION: **IDEA PUBLIC SCHOOLS - SAFETY AND SECURITY IMPROVEMENTS AT VARIOUS CAMPUSES – RIO GRANDE VALLEY**

Project include site work and interior improvements for secure access at exterior door openings and protection of glazing.

PLANS AVAILABLE: October 25, 2023, from GMS ARCHITECTS (Electronically Only). For Electronic Document request email to: susana@gmsarchitects.com

PRE-PROPOSAL CONFERENCE: **Thursday, November 2, 2023, at 2pm.**

Microsoft Teams meeting
[Click here to join the meeting](#)
Meeting ID: 214 409 213 782
Passcode: 8BrVJM
[Download Teams](#) | [Join on the web](#)
[Learn More](#) | [Meeting options](#)

Representatives of the Architect and Owner will be present at this meeting. All Proposers are encouraged to attend. Any questions concerning the Project shall be forwarded to the Architect by email at rgg@gmsarchitects.com and Blake Hillin, PMSI Project Manager; bhillin@pmsitx.com.

PROPOSAL DATE AND TIME: **Thursday, November 16, 2023 at 3:00 p.m.** Proposals received after the time indicated will not be accepted and will be returned unopened. Bid submissions that are accepted will be read aloud immediately after the bid opening date and time.

PROPOSAL LOCATION: Proposals will be accepted via email to Roan G. Gomez, AIA, Architect of Record; rgg@gmsarchitects.com and Blake Hillin, PMSI Project Manager; bhillin@pmsitx.com. Accepted bids will be read aloud on a video conference call at the link below:

Microsoft Teams meeting

[Click here to join the meeting](#)

Meeting ID: 246 338 130 213

Passcode: xzabev

[Download Teams](#) | [Join on the web](#)

[Learn More](#) | [Meeting options](#)

END OF DOCUMENT

DOCUMENT 002000

INSTRUCTIONS TO PROPOSERS

The IDEA Public Schools Board, in accordance of Texas Education Code Chapter 44, Subchapter B and Chapter 2269 of the Texas Government Code, has delegated to its Construction Committee of the Board, the authority of the selection of procurement method, determining the evaluation/ranking criteria, to rank respondents, and to select the respondent that will provide best value to the District. The Board desires to delegate to the CEO/Superintendent (or her designee) the authority to negotiate a contract with the selected respondent. The Board has also authorized its Project Manager or Architect to open bid submissions to be publicly read aloud at the time of opening. The following Instructions to Bidders outlines the decisions by the Chief Executive Officer.

1.1 AVAILABILITY OF PROPOSAL DOCUMENTS

- A. Proposal Documents will be available on the date and time indicated in Document 001000 - Request for Competitive Sealed Proposals.
- B. The Proposal Documents, made available by the Owner and Architect, are for the exclusive purpose of obtaining proposals for the Work indicated; availability does not confer a license or grant for any other use. The Proposal Documents remain the property of the Owner and must be returned if not used for construction purposes.
- C. Complete sets of the Proposal Documents shall be used for the preparation of proposals; partial sets will not be issued. Neither the Owner nor the Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Proposal Documents.
- D. Successful Proposers may retain their Proposal Documents for construction use.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

Project Description: Project include site work and interior improvements for secure access at exterior door openings and protection of glazing.

Project Location: Various Campuses – Rio Grande Valley, Texas

Owner: IDEA Public Schools, 2115 W. Pike, Weslaco, Texas 78596.

Architect: The Contract Documents were prepared for this Project by Gomez Mendez Saenz, Inc. (GMS Architects), 1150 Paredes Line Rd., Brownsville, Texas 78521 and their consultants identified on the Project Directory page of this Project Manual.

1.3 EXAMINATION OF PROPOSAL DOCUMENTS, SITE AND LOCAL CONDITIONS

- A. Proposers shall carefully examine the Proposal Documents and shall visit the site to examine the existing conditions under which the Work is to be performed. Extra payments will not be authorized for Work that could have been foreseen by careful examination of the Site.
- B. Proposers shall carefully examine the Proposal Documents to verify that they agree with the Table of Contents in the Project Manual, the Index of Sheets on the Drawings, and the Cover Page of Addenda. Proposers shall be responsible for obtaining any pages or sheets that may have been inadvertently left out during the printing process.

1.4 BIDDERS ACCESS TO PREMISES

INSTRUCTIONS TO PROPOSERS

- A. A site tour will be conducted immediately after the Pre-Proposal Conference for the purpose of acquainting bidders with the Project.

1.5 INTERPRETATION OF PROPOSAL DOCUMENTS

- A. Proposers shall promptly notify the Architect of any ambiguity, inconsistency or error that they may discover upon examination of the Proposal Documents or of the site and local conditions.
- B. Proposers requiring clarification or interpretation of the Proposal Documents shall submit written questions 48 hours before the specified time of bid.
- C. Replies will be issued to Proposers in the form of an Addendum, which will be available for purchase and on file at each location where the Proposal Documents are on file for examination.

1.6 SUBSTITUTION OF PRODUCTS, MATERIALS AND EQUIPMENT

- A. The products, materials and equipment described, indicated and specified in the Proposal Documents establish a standard of required function, dimension, appearance, and quality and have been selected as the basis of design because of their particular suitability and/or record of satisfactory performance. It is not the intent to preclude the use of other products, materials and equipment provided that it is determined to be equivalent or better by the Architect and Owner.
- B. Due to limited time available during bidding period, request for substitutions will not be evaluated by Architect until after "Notice to Proceed". For period of fifteen (15) consecutive calendar days after "Notice to Proceed", substitutions will be considered by Architect. Requests for substitution after that time will be considered or rejected at the discretion of the Architect. Refer to Section 012510 - Substitution Procedures for additional information. For gymnasium equipment and lockers – products by manufacturers that meet the design standards will be accepted.

1.7 PROPOSER'S REPRESENTATIONS

- A. By submitting a Proposal, the Proposer agrees with the following provisions: failure to do so constitutes basis for disqualification from being awarded the contract for the Work:
 - 1. The Proposal Documents have been examined and the Proposal is being submitted in accordance with the indicated requirements.
 - 2. The site has been examined and the Proposer is familiar with the conditions under which the Work is to be performed and observations at the site have been correlated with the Proposal Documents.
 - 3. Work will begin immediately upon receipt of an executed contract and a notice to proceed.
 - 4. The Proposer will participate and cooperate with the Architect.
 - 5. The Proposer agrees to complete the Work within the time limits indicated (confirmation required on bid form).
 - 6. **A competent, full-time superintendent will be assigned for the duration of the Work, including completion of outstanding work required for issuance of the certificate of substantial completion.**
 - 7. If awarded the contract for the Work, the Proposer shall furnish a performance bond and a payment bond as required.
 - 8. If awarded the contract for the Work, the Proposer shall obtain and carry for the duration of the Work the insurance coverage required.
 - 9. The Proposer has included only products, materials and equipment as specified by the Proposal Documents.

1.8 CERTIFICATION OF CRIMINAL HISTORY BACKGROUND CHECKS FOR CONTRACTORS

- A. The new law is found in Texas Education Code § 22.0834, which can be accessed through www.tlo2.tlc.state.tx.us/statutes/statutes.html. This new law was created through the

INSTRUCTIONS TO PROPOSERS

enactment of Senate Bill 9 ("SB 9") by the 80th Legislature. Senate Bill 9 can be accessed through the Texas Legislative website at www.capitol.state.tx.us and typing SB 9 into the search engine. Information regarding the fingerprinting obligations required by Senate Bill 9 can also be found on the Department of Public Safety ("DPS") website at www.txdps.state.tx.us. Much of the information can also be found in the DPS publication, *Senate Bill 9 Background Check for Education: A Reference Guide*.

- B. The contractor shall be responsible for complying with all provisions of the law. Refer to additional information provided in specification section 004150. The contractor shall include an executed "Contractor Criminal Background Certification" in the Competitive Sealed Proposal.

1.9 FELONY CONVICTION NOTIFICATION

- A. Section 44.034 of the Texas Education Code requires a person or business entity that enters into a contract with a school district must give advance notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in the conviction of a felony. Subsection (b) states, "... a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction. The district must compensate the person or business entity for the services performed before the termination of the contract." Subsection (c) states, "... this section does not apply to a publicly held corporation."
- B. Proposer shall execute the form contained in Document 004200 - Felony Conviction Notification Form and include in the Competitive Sealed Proposal.

1.10 PROPOSAL EVALUATION WAIVER

- A. By submitting a Proposal, each Proposer, and by extension each subcontractor, supplier and vendor, agrees to waive any claim it has, or may have, against the Owner and its respective employees, the Architect and its respective employees, the Architect's Consultants and its respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any Proposal; waiver of any requirements under the Proposal Documents, acceptance or rejections of any Proposal; and award of the contract.
- B. Proposer shall execute the form contained in Document 004300 - Proposal Evaluation Waiver Form and include in the Competitive Sealed Proposal.

1.11 NON-DISCRIMINATORY EMPLOYMENT

- A. All Proposers, if awarded the contract for the Work, and subcontractors, suppliers and vendors shall agree to refrain from discrimination in terms and conditions of employment on the basis of race, color, religion, sex, or national origin, and agrees to take affirmative action as required by Federal Statutes and Rules and Regulations issued in order to maintain and insure non-discriminatory employment practices.
- B. Proposer shall execute the form contained in Document 004400 - Affidavit of Non-Discriminatory Employment Form and include in the Competitive Sealed Proposal.

1.12 PARTICIPATION OF UNDER-UTILIZED BUSINESSES

- A. As a policy, IDEA Public Schools promotes the inclusion of under-utilized businesses as part of the construction team to provide opportunities for less-advantaged enterprises where possible and appropriate. Proposers are encouraged to submit proposed M/WBE subcontractors who will be actively engaged in the project. In addition, if the firm has a formal program involving mentoring of under-utilized subcontractors and suppliers to provide management and technical assistance, information related to the mentoring program should be provided. If the Proposer is not engaged in a formal mentoring program, then letters from under-utilized firms describing the mentoring efforts provided are encouraged and will be accepted.

1.13 SUBMISSION PROCEDURES FOR PROPOSALS

- A. A Proposal will be considered invalid if it has not been received, regardless of how sent, at the designated location prior to the designated time fixed for the Proposal Opening, or prior to any extension issued by Addenda. Proposals received in this manner will be returned to the Proposer unopened.
- B. If a Proposal Form is sent by U.S. Mail, it must be sent as Registered Mail. Proposals received by facsimile machine will be rejected.
- C. Proposals shall be made on unaltered forms furnished within the Proposal Documents. All blank spaces shall be properly filled in by typewriter or manually in black or blue ink. The signer of the Proposal must initial any alteration or erasure to information entered in the blank spaces. Oral, telephonic or personal proposals will not be considered.
- D. The various documents that will be submitted as the Competitive Sealed Proposal electronically at a maximum file size of 20MB.
- E. **Proposers are requested to submit the following electronic files to [Roan Gomez, AIA at \[rgg@gmsarchitects.com\]\(mailto:rgg@gmsarchitects.com\)](mailto:Roan.Gomez@pmsitx.com) and [Blake Hillin at \[bhillin@pmsitx.com\]\(mailto:bhillin@pmsitx.com\)](mailto:Blake.Hillin@pmsitx.com).**
- F. The Competitive Sealed Proposal shall contain the following fully executed documents:
 - 1. Proposal:
 - a. Document 004100 - Proposal Form, signed in longhand below the typed name of the person authorized to bind the Proposer to a contract. Where the Proposer is a corporation, the Proposal must be signed with the legal name of the corporation followed by the name of the State of Incorporation and the legal signature of a person authorized to bind the corporation to a contract.
 - b. Document 004200 - Felony Conviction Notification Form
 - c. Document 004300 - Proposal Evaluation Waiver Form
 - d. Document 004400 - Affidavit of Non-Discriminatory Employment Form
 - e. Document 004500 – Conflict of Interest Questionnaire
 - f. Document 006100 - Bid Bond
 - g. Information required in Section 1.15 below.
 - h. Proposed subcontractor list (within 24 hours after bid time and date).
- G. The Owner reserves the right to reject any Proposal if the evidence submitted by, or investigations of, such Proposer fails to satisfy the Owner that such Proposer is properly qualified to carry out the obligations of the contract and to complete the Work therein.
- H. Failure to submit a Proposal in the form requested, or the inclusion of stipulations, conditions, qualifications, limitations, or provisions distorting the intent of the Proposal Documents, will render the Proposal irregular and subject to rejection.
- I. A Proposal may be withdrawn only upon written request by the Proposer provided it is received by the Owner at the place fixed for the Proposal Opening at least 48 hours prior to the time fixed

INSTRUCTIONS TO PROPOSERS

for the Proposal Opening. The withdrawal of a Proposal does not prejudice the right of the Proposer to submit a new Proposal at the time and place fixed for the Proposal Opening. Proposals may not be withdrawn for a period of five (5) calendar days after the time fixed for the Proposal Opening.

- J. Proposals shall be valid for sixty (60) calendar days from the date and time of opening. By signing this proposal, the Proposer certifies and represents to the Owner that the Proposer has not offered, conferred, or agreed to confer any pecuniary benefit or other thing of value for the receipt of special treatment, advantage, information, recipient's decision, opinion, recommendation, vote or any other exercise of discretion concerning this proposal. The Proposer further certifies that the Proposer is not prohibited from doing business with any Federal or State Department or Agency and that to the best of their knowledge no company employee, either full or part time, owner, official, stockholder, subcontractor, or member of their immediate family, are related to a member of the Board of Trustees in violation of the Nepotism Prohibition of the State of Texas Government Code (Chapter 573 Gov. Code). Venue for any litigation arising from this contract shall lie in the County where the project is located.
- K. The drawings and specifications set forth for this proposal are not intended to be restrictive. The intent of this proposal is to obtain the best construction project at the most economical price available. The specifications are established to ensure that the Owner remains within the bounds of the rules and regulations that govern its operation and to protect the taxpayer's investment in this entity.

1.14 BID BOND

- A. A Proposal will only be considered if accompanied by an executed Bid Bond per Document 006100, in the amount of not less than 5 percent of the greatest amount proposed (considering alternates, if any).
- B. Proposer shall execute the Bid Bond form referenced in Document 006100 - Bond Forms and include in the Competitive Sealed Proposal.
- C. The Bid Bond shall ensure the execution of the contract and the furnishing of an acceptable performance bond and payment bond by the Successful Proposer within five (5) calendar days after Notification of Award. The Proposal of the Successful Proposer may not be withdrawn within 5 calendar days after the time fixed for the Proposal Opening without the written consent of the Owner.
- D. Should the successful Proposer refuse to enter into such contract or fail to furnish the required bonds, the amount of the Bid Bond shall be forfeited to the Owner as liquidated damages, not as a penalty.
- E. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.
- F. The Owner reserves the right to retain the Bid Bond of Proposers to which an award is being considered until either the contract has been executed and bonds have been furnished, or the specified time has elapsed so that Proposals may be withdrawn, or all Proposals have been rejected.

1.15 DETERMINATION OF SUCCESSFUL PROPOSER

The Owner reserves the right to apply all criteria as deemed appropriate and allowed in the Texas Education Code 44.031 (b). Including but not limited to, as provided by section 44.031 (b), Part (8), other relevant factors specifically denoted in the bid package. The district specifically requests offerors to answer or provide the information to the following selection criteria. Questions left unanswered or omitted requested information may result in a partial or total reduction of allocated points.

INSTRUCTIONS TO PROPOSERS

- A. Construction Delivery Approach: Competitive Sealed Proposal (CSP), given the market is conducive for securing quality contractors when bidding this approach. This approach is a more cost-effective approach and is easier to manage from a funds-management and contracts standpoint than other delivery methods. The added risk of a lower quality subcontractor pool can be managed before award by 1) vetting subcontractors submitted by the contractor during the negotiation period, and 2) by adding subcontractor quality to the selection criteria.
- B. Pass/Fail Criteria
1. Ability to provide required insurance
 2. Ability to meet the project schedule
 3. Acceptable firm stability
 4. History of excessive litigation
 5. Conflicts of interest
 6. Criminal conviction history
 7. Substantive objections to the form of contract
 8. Other legal status barring award of contract
- C. Proposed Questions & Information for Each Pass/Fail Category:
1. List your insurance carrier(s) and confirm ability to meet the insurance requirements published in the Request for Proposals.
 2. Confirm ability to meet the project schedule published in the Request for Proposals.
 3. IDEA is interested in understanding the stability of your firm in terms of managed growth. Provide firm resources or a workload analysis based on gross billings for the prior 3 years and projecting through 2022 assuming that your firm is awarded this Project. The intent is to understand your firm's growth and trajectory and the company's ability to successfully manage projects based on historical and future trends. Provide documentation showing the number of years that the entity has been in business under the same legal name.
 4. Provide a history of litigation your firm has been involved in during the past five years and the disposition of such litigation.
 5. Provide the completed conflicts of interest form provided in the Request for Proposals.
 6. Provide the completed criminal conviction form provided in the Request for Proposals.
 7. Review and acknowledge the contract in Exhibit E and list any objections or modifications to the contract form.
 8. Confirm that your firm is legally able to conduct business in the State of Texas and enter into construction contracts involving public funds.
- D. Weighted Scoring Criteria
1. Firm Experience/Key Personnel and Firm Stability/Management **(30 Points)**
 2. Proposed subcontractor team (submitted 48 hours after bid opening) **(5 Points)**
 3. Cost **(50 Points)**
 4. K-12 Construction Experience **(10 Points)**
 5. Schedule and Procurement Strategy. **(5 Points)**
- E. Relevant Firm Experience, Key Personnel, and Ability to Complete the Work **(30 Points)**
1. Include an organizational chart for your proposed management team. The proposed team will be evaluated based on their relevant experience and qualifications. Include, at a minimum, the name of the principal-in-charge for the firm as well as the following staff: project manager (primary decision maker), superintendent(s), project engineer, and safety manager. The safety manager may have other roles, such as project superintendent or project manager, but must be on-site full time. Staffing strength is of significant importance to IDEA Public Schools and changes to proposed staff (or staff options) without the prior approval of IDEA Public Schools may be grounds for termination prior to construction phase services. **10 points**
 2. Provide information on a minimum of five projects of comparable type, size, and quality that your firm has completed in the last five years. Identify similar challenges and describe your approach. Regarding these projects, identify which staff members were on the featured

INSTRUCTIONS TO PROPOSERS

- projects, along with names and contact information for the related Owner and Architect. **5 points**
3. Provide address(es)/details on each permanently staffed office location in Texas and list personnel within 1 hour of each project location. **5 points**
 4. Describe how your firm's quality control team will measure the quality of construction and commissioning and how will you address non-conforming work. **5 points**
 5. Describe your firm's warranty service support philosophy and your approach to warranty service implementation. **5 points**

F. Proposed Subcontractor Team (**5 Points**)

Within 48 hours of the proposal deadline, submit a list of proposed subcontractors for major trades of work (scope over \$50,000). Subcontractor strength will be evaluated based on the subcontractors' reputation, past experience with the project team, strength in the market where the project is located, and other relevant factors. **5 points**

G. Cost (50 Points)

Points will be awarded based on Offerors' ratio to the lowest price received. Points will be awarded based on the following formula: $\text{Lowest Bid} / \text{Proposer's Bid} \times 50 = \text{Points Received}$. As an example, the following sample scoring matrix is provided:

Proposer	Offeror's Proposed Cost	Calculation	Assigned Point Value
Contractor 1	\$2,500,000	$\$2,500,000 / \$2,500,000 \times 50 =$	50
Contractor 2	\$2,700,000	$\$2,500,000 / \$2,700,000 \times 50 =$	46
Contractor 3	\$2,800,000	$\$2,500,000 / \$2,800,000 \times 50 =$	45
Contractor 4	\$2,900,000	$\$2,500,000 / \$2,900,000 \times 50 =$	43
Contractor 5	\$3,000,000	$\$2,500,000 / \$3,000,000 \times 50 =$	42

H. K-12 Construction Experience (**10 Points**)

Provide details of all K-12 school construction projects completed or underway over the past ten years. Describe your firm's experience with large-scale multi-campus projects. Provide contact information for the owner's representative for all projects completed in the last five years. Recent experience and experience of the proposed project team will receive highest consideration. **10 points**

I. Schedule and Procurement Strategy (**5 Points**)

Provide details on how your firm manages risk associated with procurement delays and escalation to ensure on-time delivery and cost control in today's volatile market. **5 points**

J. The Owner may interview the top ranked firms. The following information shall be presented during the interview:

1. A schedule and work plan indicating how they will approach the project. Including their supervision, subcontractors, use of double shifts, timeliness of punch list completion, and other information that will show their commitment to the project and schedule.

K. The Owner reserves the right to reject any or all Proposals and to waive any formalities or irregularities and to make the award of the contract in the best interests of the Owner.

L. The Owner will make a decision regarding the determination of the successful Proposer based on Texas Education Code §§44.035, 44.039.

1.16 SUBCONTRACTOR INFORMATION

- A. Upon request from the Owner, within five (5) calendar days the Successful Proposer shall furnish a statement of costs for each major portion of the Work included in the Proposal. Each section of the specifications shall be considered a major portion of the Work and shall be shown as a separate cost item.

1.17 AWARD OF CONTRACT

- A. After the time fixed for the Proposal Opening, at the discretion of the Owner, the Proposer determined to be the Successful Proposer will be promptly notified that the Owner intends to enter into a contract for the Work.
- B. If any of the following occurs related to the Successful Proposer, the Owner has the right to award the contract for the Work to another Proposer, or Proposer's, or may call for the submission of new Proposals:
 - 1. The Proposer withdraws the Proposer's Proposal within five (5) calendar days after the time fixed for the Proposal Opening.
 - 2. The Proposer fails or refuses to execute the contract, or other required forms within 5 calendar days after they have been presented for execution.
 - 3. The Proposer fails or refuses to furnish a properly executed performance bond, a properly executed payment bond, and a certificate of insurance within five (5) calendar days of the request.

1.18 NOTICE TO PROCEED

- A. The Successful Proposer / General Contractor shall not commence the Work under this contract until the contract has been duly executed by both parties, and a written Notice to Proceed has been issued by the Owner.

B. FUNDING/NOTICE TO PROCEED TO COMMENCE WORK

- 1. Notice regarding construction project financing: This project is a "public project" for purposes of Tx. Bus. Comm. Code chapter 56. Unlike a traditional school district where a bond election must be held and approved before major construction projects are undertaken charter schools such as IDEA are authorized to use interim financing, traditional bank financing and to issue tax exempt bonds that do not require an election. IDEA typically uses a combination of the above and proceeds with construction using an available line of credit before issuing bonds to finance the completed project. Responding bidders and the selected contractor acknowledge the financing plan of the Owner and agree that they will comply with IDEA's notice to proceed and commence construction when and as directed, in order to meet IDEA's construction timelines. The following information is provided to the selected contractor and shall be provided by each contractor in writing to each subcontractor in accordance with Bus. Comm. Code 56.054(e):

Owner/Obligor: IDEA Public Schools, 2115 W. Pike, Weslaco, Texas 78596

Surety: [INSERT NAME ADDRESS OF SURETY ON PAYMENT BOND]

Statement: IDEA is the primary obligor and provides the following statement: "funds are available and have been authorized for the full contract amount for the construction of the improvements"

1.19 WORK UNDER OTHER CONTRACTS

- A. Simultaneous Separate Contracts: Owner will award separate contracts for performance of certain construction operations at Project site. Those operations may be conducted simultaneously with work under this Contract. The separate contracts **excluded** from this contract will include the following:
- B. contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract.

1.20 WORK SCHEDULE AND COMPLETION TIME

- A. A Notice to Proceed (NTP) will be issued on or about **November 30, 2023**, for the full building permit.

INSTRUCTIONS TO PROPOSERS

B. The project shall have Substantial Completion shall not be later than **May 28, 2024, (180 Calendar Days)**. Final completion shall be 60 days after Substantial Completion.

C. **Contractor Work schedule shall include the weather days listed in Section 15 of the Supplementary General Conditions**

1.21 WORK RESTRICTIONS

A. Reference section 011400 for work restrictions.

1.22 PERFORMANCE BOND AND PAYMENT BOND AND RETAINAGE AMOUNT

A. Each Proposer shall include in the Proposal the cost for a performance bond and a payment bond, each in the amount of 100 percent of greatest amount proposed (considering alternates, if any). The retainage amount will be 5% of the Contract amount.

B. These bonds shall cover the faithful performance of the contract and payment of all obligations arising thereunder in such form as the Owner may prescribe. The bonding companies must be acceptable to the Owner.

END OF DOCUMENT

PROPOSAL FORM

Name of Proposer: _____

Date of Proposal: _____

To: IDEA Public Schools (Owner)
2115 W. Pike Blvd. Weslaco, TX 78596

We, the undersigned, propose to enter into a Contract with the Owner, to furnish labor, material, tools, transportation, insurance, permits, and all incidentals necessary for the completion of the **IDEA SAFETY AND SECURITY IMPROVEMENTS – RIO GRANDE VALLEY, TX** in accordance with the drawings and specifications **Dated 10/11/2023**, prepared by GMS Architects, Brownsville, Texas.

We have carefully reviewed and understand the “Instructions to Proposers”, the drawings, the specifications, and have acquainted ourselves with the existing and anticipated conditions that might affect the Work.

We understand that if we are the Successful Proposer a Contract will be prepared, and we will furnish satisfactory payment and performance bonds each in the full amount of the Contract covering all parts of the Work.

The Proposal includes the following: Provide all items, articles, materials, operations of methods listed, mentioned or scheduled on the drawings and/or herein, including all labor, materials, equipment and incidentals necessary and required for the **IDEA SAFETY AND SECURITY IMPROVEMENTS – RIO GRANDE VALLEY, TX** for the Owner.

Proposers shall include in the BASE PROPOSAL the work described in attached Proposal Documents.
BASE PROPOSAL:

_____ Dollars (\$_____).

ALLOWANCES:

The Undersigned acknowledges by initials _____ that the Allowances listed below and in Specification Section 012100 - Allowances are included in the Base Proposal amount. Reference Specification Section 012100 - Allowances for a complete description of each Allowance.

ALLOWANCE NO. 1: OWNER’S CONTINGENCY ALLOWANCE: Include the amount of \$150,000 for use according to the Owner’s instructions.

UNIT PRICES:

The Undersigned acknowledges by initials _____ that the Unit Prices listed below and in Specification Section 012200 - Unit Prices are included in the Base Proposal amount. Reference Specification Section 012200 - Unit Prices for a complete description of each Unit Price.

The Undersigned further agrees that in case of authorized variations of quantities from those shown or specified, the following Unit Prices will be used in adjusting the Contract Sum.

Add or Subtract

- A. Door Closer _____ Dollars (\$_____).
- B. Removable Door Mullion _____ Dollars (\$_____).
- C. Lockset _____ Dollars (\$_____).
- D. Continuous Wired Piano Hinge _____ Dollars (\$_____).
- E. 1-1/2 Pair Butt Wired Door Hinges _____ Dollars (\$_____).
- F. Card Reader _____ Dollars (\$_____).
- G. CCTV Camera _____ Dollars (\$_____).

H. Vape Sensor _____	Dollars (\$ _____).
I. License Plate Camera _____	Dollars (\$ _____).
J. Door Power Supply _____	Dollars (\$ _____).

ALTERNATES:

Proposers shall include in the PROPOSAL, the work described in attached Proposal Documents. Reference Specification Section 012300 - Alternates for a complete description of each Alternate. The Undersigned further agrees that in case of authorized variations of quantities from those shown or specified, the following Unit Prices will be used in adjusting the Contract Sum.

Alternate:

1. Install License Plate Camera as noted on MEP Drawings. _____ Dollars (\$ _____).
2. Install Hallway Camera at Toilets as noted on MEP Drawings _____ Dollars (\$ _____).

DECLARATION

The Undersigned hereby declares that he has visited the site and has carefully examined the Drawings, Specifications, Contract Documents, and Proposal Documents related to the work covered by this Proposal.

DELAY COST

The Undersigned understands that delay costs will be incurred as defined in other portions of the Proposal Documents, will be included in the Contract, and the General Contractor will be bound thereto.

EXECUTION OF CONTRACT

Upon receipt of notice of acceptance of the Proposal, the Undersigned will immediately execute the formal Contract.

RECEIPT OF ADDENDA

I hereby acknowledge receipt of the following Addenda:

Addendum No. _____ dated _____ Addendum No. _____ dated _____
 Addendum No. _____ dated _____ Addendum No. _____ dated _____

- We have reviewed the Contract and take no exceptions.
- We have reviewed the proposed schedule completion duration, and we acknowledge that Substantial Completion of the Work can be completed within the duration specified.

Witness: _____ Proposer: _____
 By: _____
 Address: _____
 City: _____
 Zip Code: _____
 Telephone: _____

(SEAL - If bid is by a corporation)

END OF PROPOSAL FORM

SECTION 004150

**Instructions to Contractors Regarding Criminal History
Background Searches Under Senate Bill 9**

Senate Bill 9 directs contractors (i.e., Company) to obtain state and national criminal history background searches on their employees who will have direct contact with students, and to receive those results through the DPS criminal history clearinghouse (Fingerprint-based Applicant Clearinghouse of Texas – FACT). In order for contractors to receive the information through FACT, they must first establish an account with the DPS for FACT clearinghouse access. The Company owner must sign a user agreement with the DPS. To obtain the user agreement and more information, Company must contact:

Access and Dissemination Bureau
Texas Department of Public Safety
Crime Records Service
P. O. Box 149322
Austin, Texas 78714-9322

Email: FACT@txdps.State.tx.us
Phone: (512) 424-2365

For fastest service, please email or call. State in the message that Company is a school contractor and needs to have an account established for DPS FACT clearinghouse access. Please include:

Company Name
Company Address
Company Phone
Name of Company point of contact
Phone of Company point of contact
Company email to be used for notification of FACT records and messages

The information in the DPS FACT Clearinghouse is confidential, and access must be restricted to the least number of persons needed to review the records. The account must include at least one designated supervisor to make necessary changes and to monitor the site's security and the access to the criminal history data retrieved. Additional users must be limited to those who need to request, retrieve, or evaluate data regarding the individual applicants.

PLEASE NOTE: After the Company signs the DPS User Agreement for FACT, DPS will provide the Company with a revised ***FAST Fingerprint Pass*** that Company will have to provide to its employees and applicants. Company's employees and applicants will use that ***FAST Fingerprint Pass*** when scheduling their FAST fingerprinting.

Contractor Criminal Background Certification

Introduction: Texas Education Code Chapter 22 requires service contractors to obtain criminal history record information regarding covered employees and to certify that fact to the Owner. Covered employees with disqualifying convictions are prohibited from serving at a School.

Definitions:

Covered employees: All employees of a contractor who have or will have continuing duties related to the service to be performed at the school and have or will have direct contact with students. The Owner will be the final arbiter of what constitutes direct contact with students.

Disqualifying conviction: One of the following offenses, 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; or (d) the conviction of a felony or misdemeanor that would disqualify a person from obtaining certification as an educator under Texas Education Code 21.060.

Note: For covered persons hired on or after January 1, 2008, fingerprinting and photographing of the covered person is required. A covered person is considered to have been employed by a service contractor as of the date the covered person first provided services for compensation.

On behalf of _____ (“Contractor”), I certify that
[check one]:

None of Contractor’s employees are *covered employees*, as defined above.

Or

Some or all of Contractor’s employees are *covered employees*. If this box is selected, I further certify that:

(1) Contractor has obtained all required criminal history record information, through the Texas Department of Public Safety, regarding its covered employees. None of the covered employees has a disqualifying conviction. Contractor has taken reasonable steps to ensure that its employees who are not covered employees do not have continuing duties related to the contract services or direct contact with students.

(2) If Contractor receives information that a covered employee has a disqualifying conviction, Contractor will immediately remove the covered employee from contract duties and notify the Owner in writing within three (3) business days.

(3) Upon request, Contractor will make available for the Owner’s inspection the criminal history record information of any covered employee. If the Owner objects to the assignment of a covered employee on the basis of the covered employee’s criminal history record information, Contractor agrees to discontinue using that covered employee to provide services at the District.

Noncompliance by Contractor with this certification may be grounds for contract termination.

Company Name: _____/ **Submitter’s Name/Title:** _____

Email Address: (PLEASE TYPE EMAIL ADDRESS) _____

Submitter’s Signature: _____ **Telephone No.** _____ / **800 # (if available)** _____

Fax No. _____ **Date:** _____

Address: _____ **City, State and Zip Code:** _____

This form is required to be completed and signed however, only the successful Proposers will be required to comply with requirement set forth in Act of May 28, 2007, 80th Leg., R.S., S.B. 9, § 30. All related costs including background checks/fingerprinting shall be at the contractor’s expense.
Revised February 1, 2011 *This sheet must be completed, signed, and returned with Prime Contractor’s submittal*

Subcontractor Form

Undersigned shall employ, subject to the Owner's approval, the following subcontractor for the Request for Proposal. **One (1) form must be provided for each and every subcontractor employed.** The prime Proposer shall bear the sole responsibility for the successful completion of work performed by the below listed third party service provider(s).

Service provided by Subcontractor:	
Name of Subcontractor:	
Address:	
City/State/Zip:	
Telephone:	
Fax Number:	
E-Mail Address:	
Point of Contact:	
Business Days/Hours:	
No. Years in Business Under This Name:	
No. Years at Location Listed:	
No. Personnel Employed:	

Subcontractor Name: _____ /Submitter's Name/Title: _____

Address: _____ City, State and Zip Code: _____

Email Address: _____

Submitter's Signature: _____ Telephone No. _____

Fax No. _____ 800 # (if available) _____

Date: _____

Note: Due to provisions made to Contracted Services Criminal History by HB 2730, effective September 1, 2009, all subcontractors must certify to the Owner, that the subcontractor complied and adheres to the Criminal History check requirements.

All subcontractors identified above, must complete the "Subcontractor Criminal Background Certification" form.

This sheet must be completed, signed, and returned with Prime Contractor's submittal

Revised February 1, 2011

Subcontractor Criminal Background Certification

Introduction: Texas Education Code Chapter 22 requires service subcontractors to obtain criminal history record information regarding covered employees and to certify that fact to the Owner. Covered employees with disqualifying convictions are prohibited from serving at a school district.

Definitions:

Covered employees: All employees of a subcontractor who have or will have continuing duties related to the service to be performed at the school and have or will have direct contact with students. The Owner will be the final arbiter of what constitutes direct contact with students.

Disqualifying conviction: One of the following offenses, 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; (c) an equivalent offense under federal law or the laws of another state; or (d) the conviction of a felony or misdemeanor that would disqualify a person from obtaining certification as an educator under Texas Education Code 21.060. This same standard applies to employees of subcontractors.

Note: For covered persons hired on or after January 1, 2008, fingerprinting and photographing of the covered person is required. A covered person is considered to have been employed by a service contractor as of the date the covered person first provided services for compensation

On behalf of _____ (“Subcontractor”), I certify that
[check one]:

None of subcontractor’s employees are *covered employees*, as defined above.

Or

Some or all of subcontractor’s employees are *covered employees*. If this box is selected, I further certify that:

(1) Subcontractor has obtained all required criminal history record information, through the Texas Department of Public Safety, regarding its covered employees. None of the covered employees has a disqualifying conviction. Subcontractor has taken reasonable steps to ensure that its employees who are not covered employees do not have continuing duties related to the contract services or direct contact with students.

(2) If Subcontractor receives information that a covered employee has a disqualifying conviction, subcontractor will immediately remove the covered employee from contract duties and notify the Owner in writing within three (3) business days.

(3) Upon request, Subcontractor will make available for the Owner’s inspection the criminal history record information of any covered employee. If the Owner objects to the assignment of a covered employee on the basis of the covered employee’s criminal history record information, Subcontractor agrees to discontinue using that covered employee to provide services at the District.

Noncompliance by Subcontractor with this certification may be grounds for contract termination.

Subcontractor Name: _____/ **Submitter’s Name/Title:** _____

Email Address: (PLEASE TYPE EMAIL ADDRESS)

Submitter’s Signature: _____ **Telephone No.** _____ **/ 800 # (if available)**

Fax No. _____ **Date:** _____

Address: _____ **City, State and Zip Code:** _____ This

form is required to be completed and signed however, only the successful Proposers will be required to comply with requirement set forth in Act of May 28, 2007, 80th Leg., R.S., S.B. 9, § 30. All related costs including background checks/fingerprinting shall be at the sub- contractor’s expense. Revised February 1, 2011 *This sheet must be completed, signed, and returned with Prime Contractor’s submittal.*

FELONY CONVICTION NOTIFICATION FORM

FELONY CONVICTION NOTIFICATION

STATEMENT OF AFFIRMATION

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

Firm's
Name: _____ Address _____

"a. ___ My firm is a publicly held corporation, therefore, this reporting requirement is not applicable."

"b. ___ My firm is not owned nor operated by anyone who has been convicted of a felony."

"c. ___ My firm is owned or operated by the following individual(s) who has/have been convicted of a felony:"

Name of Felon(s)

Details of Conviction(s) _____

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

Offeror's
Name _____

Position/Title _____

Offeror's
Signature _____ Date _____

Subscribed and sworn to me on this _____ day of _____, 20__.

Notary Public

My Commission expires

END OF DOCUMENT

FELONY CONVICTION NOTIFICATION FORM

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PROPOSAL EVALUATION WAIVER FORM

PROPOSAL EVALUATION WAIVER

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

STATEMENT OF AFFIRMATION

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

Firm's Name _____ Address _____

Proposer's Name _____ Date _____

Proposer's Signature _____

Position/Title _____

Subscribed and sworn to me on this _____ day of _____, 20__.

Notary Public

My Commission expires

END OF DOCUMENT

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AFFIDAVIT OF NON-DISCRIMINATORY EMPLOYMENT FORM

AFFIDAVIT OF NON-DISCRIMINATORY EMPLOYMENT

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

Name of Contractor or Subcontractor

Subscribed and sworn to me on this _____ day of _____, 20____.

Notary Public

My Commission expires

END OF DOCUMENT

AFFIDAVIT OF NON-DISCRIMINATORY EMPLOYMENT FORM

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CONFLICT OF INTEREST FORM

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

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

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

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

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

OFFICE USE ONLY

Date Received

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

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

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

Name of Officer

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

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

Yes No

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

Yes No

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

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

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST FORM

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

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

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

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

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

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

(2) the vendor:

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

(i) a contract between the local governmental entity and vendor has been executed;
or

(ii) the local governmental entity is considering entering into a contract with the vendor;

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

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

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

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

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

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

(3) has a family relationship with a local government officer of that local governmental entity.

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

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

DOCUMENT 005200

AGREEMENT FORM

- A. The "Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM", AIA Document A101, 2017 Edition, will be the form used as a Contract for this Project.
- B. A copy of the Supplementary Conditions Document is included in this Project Manual, following this section.

END OF DOCUMENT

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AIA[®] Document A101[®] – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

Idea Public Schools
2115 W. Pike Blvd.
Weslaco, Texas 78596

and the Contractor:
(Name, legal status, address and other information)

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

Idea Public Schools -Safety and Security Improvements
Rio Grande Valley, Texas

The Architect:
(Name, legal status, address and other information)

Gomez Mendez Saenz, Inc.
1150 Paredes Line Rd.
Brownsville, Texas 78521
Telephone Number: 956-546-0110
Fax Number: 956-546-0196

The Owner and Contractor agree as follows.

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

The parties should complete A101[®]-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201[®]-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA[®] Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS**
- 2 THE WORK OF THIS CONTRACT**
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**
- EXHIBIT A INSURANCE AND BONDS**

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

- The date of this Agreement.
- A date set forth in a notice to proceed issued by the Owner.
- Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[] Not later than () calendar days from the date of commencement of the Work.

[] By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. (Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum: (Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any: (Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any: (Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other: (Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

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

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

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

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

%

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

Arbitration pursuant to Section 15.4 of AIA Document A201–2017

Litigation in a court of competent jurisdiction

Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)

[Redacted]

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

(Name, address, email address, and other information)

[Redacted]

2115 W. Pike Blvd.
Weslaco, Texas 78596

§ 8.3 The Contractor’s representative:

(Name, address, email address, and other information)

[Redacted]

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™-2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203-2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:

(Insert the date of the E204-2017 incorporated into this Agreement.)

[] The Sustainability Plan:

Title	Date	Pages

[] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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

OWNER (Signature)
 Leann Hernandez, Chief Financial Officer
 (Printed name and title)

CONTRACTOR (Signature)

 (Printed name and title)

**SUPPLEMENTARY CONDITIONS TO THE STANDARD FORM OF
AGREEMENT BETWEEN OWNER AND CONTRACTOR
AIA DOCUMENT A101-2017**

The Supplementary Conditions contain modifications and additions to the Standard Form of Agreement between Owner and Contractor, AIA Document A101—2017 Edition. Where any part of the AIA A101—2017 is modified or voided by the Supplementary Conditions, the unaltered portions shall remain in effect.

All references to the AIA A201—2017 shall mean the AIA Document AIA A201—2017 as modified by Owner.

ARTICLE 1 THE CONTRACT DOCUMENTS

In line 1 after “Agreement” add “, as amended,” and after “Contract” add “, as amended”. In line 2 after “Conditions),” add “all sections of the Project Manual, including”.

Add new Sections 1.2, 1.3 and 1.4

1.2 This Agreement, as amended, represents the entire and integrated agreement between the Owner and the Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. Any revision, amendment, or modification to this Agreement shall be valid, binding, and enforceable only if said revision, amendment or modification is made conspicuous by being underlined, lined-through, or highlighted in this Agreement signed by Contractor and the authorized representative of Owner’s Board of Directors. In the event of conflict, terms and conditions contained in the Agreement, as amended, shall take precedence over terms and conditions contained in the General Conditions, as amended, and the terms and conditions in the General Conditions, as amended, shall take precedence over all other terms and conditions contained in the other Contract Documents. If the Request for Proposals and the Proposal are included in the Contract Documents, then the Request for Proposals shall take precedence over the Proposal, unless specifically agreed otherwise herein.

1.3 The Board of Directors, by majority vote, is the only representative of the Owner having the power to enter into or amend a contract, to approve changes in the scope of the Work, to approve and execute a Change Order or Construction Change Directive modifying the Contract Sum, or to agree to an extension to the date of Substantial or Final Completion. The Owner designates the following as the individual authorized to sign documents on behalf of the Board of Directors: _____, or Successor.

1.4 The Board designates the authorized representatives identified in Paragraph 8.3 to act on its behalf in other respects.

ARTICLE 3 – Date of Commencement and Substantial Completion

3.1 In the second option after the last sentence add “The notice to proceed shall not be issued until the Agreement has been signed by the Contractor, approved by the Owner’s Board of Directors, signed by the Owner’s authorized representative, and Owner and Architect have received all required payment and performance bonds and insurance, in compliance with Article 11 of AIA Document A201-2017, as amended.”

Revise heading of paragraph 3.3 to read **“Substantial Completion Dates and Milestones”**

3.3.1 In the first line after “shall” insert “diligently prosecute and”.

Modify 3.3.2 to read:

3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions or defined Milestones of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such Milestones or portions by the dates:

Building Foundation Systems	–	<u>N/A</u>
Steel Erection	–	<u>N/A</u>
Building Dry-in	–	<u>N/A</u>
Permanent Power	–	<u>N/A</u>
Substantial Completion of all Work		<u>N/A</u>

3.3.3 At the end of the paragraph add the following:

Final Completion shall be 30 calendar days after the date of Substantial Completion, subject to adjustments of this Contract Time as provided in the Contract Documents.

Refer to Sections 8.3.4 and 8.3.5 of the AIA A201™-2017 General Conditions for a description of liquidated damages.

ARTICLE 4 – Contract Sum

Insert new section 4.1.1

4.1.1 The Contract Sum contains an Owner’s Contingency in the amount of **\$150,000**. This contingency is for the sole use of the Owner to be used for changes in the scope of the Work and for the betterment of the Project. Owner’s authorized representative may approve any expenditure from Owner’s Contingency without further Board of Directors approval. If the Owner’s Contingency is not expended or

not fully expended, then any unused portion shall belong to the Owner and shall be credited to the Owner in calculating final payment.

Delete Section 4.5 in its entirety.

ARTICLE 5 – Payments

5.1.3 Delete this paragraph in its entirety and replace with the following:

“Contractor shall submit an Application for Payment to the Architect by the **1st** of the month, including all supporting documentation necessary for same. Architect shall have seven **(7) days** to approve or reject the application for payment. Owner shall pay Contractor within **30 days** of receipt of an approved Application of Payment from the Architect. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner no later than **30 days** after the Architect approves the Application for Payment. A draft pencil review of the Application for Payment prior to the approval date may be conducted to facilitate the approval process.”

5.1.4 In line 2 after “sum” insert “, less any unused Owner’s contingency,”. In line 4 after “Architect” insert “, and Program Manager, if applicable,”. In line 5 after “values” insert “, unless objected to by the Architect and Program Manager, if applicable,”.

5.1.9 In line one after “prior” insert “written”, and after “approval” insert “or as otherwise provided in Section 9.3.2 of the AIA Document A201-2007, as amended”.

Delete sections 5.1.7.1.1, 5.1.7.2, and 5.1.7.3 in their entirety.

5.2.1 In line 1 after “Sum” insert “minus disputed sums, authorized deductions and liquidated damages,”. In line 2 delete “when” and insert “after”.

5.2.1.2 In line 1 after “correct” insert “nonconforming”, and after “2017” insert “,as amended,”.

Insert new 5.2.1.2

5.2.1.2 the Contractor has provided all documents required by Sections 3.5 et seq. and 9.10.2 of AIA Document A201-2017, as amended; and

5.2.1.3 In line 1 after “Architect” insert “and approved by the Program Manager if applicable.”

5.2.2 At the end of the paragraph delete “or as follows” and insert “and upon acceptance by the Owner’s Board of Directors, or its designee, and Architect, and after satisfactory evidence has been given by the Contractor that all of the Contractor’s subcontractors and suppliers have been paid and the entire Project is free from liens.”

ARTICLE 6 Dispute Resolution

6.2 Check the second box, “Litigation in a court of competent jurisdiction.” Delete the last paragraph in its entirety and replace with the following:

The parties elect Litigation in a court of competent jurisdiction (specifically excluding Arbitration and Other/Mediation). This election supersedes the selection of any other method in the AIA A101™-2017 or elsewhere in the Contract Documents.

ARTICLE 7 Termination or Suspension

7.1.1 Delete in its entirety

7.2 After “2017” insert “, as amended.”

ARTICLE 8 Miscellaneous Provision

8.6 Delete in its entirety

Insert new Sections 8.7.1, 8.7.2, 8.7.3, 8.7.4, 8.7.5, 8.7.6, 8.7.7, 8.7.8, 8.7.9, and 8.7.10

8.7.1 The Agreement shall be governed by the laws of the State of Texas, and any litigation shall be conducted in state district court. Mandatory and exclusive venue shall be in multiple counties in Texas, or, if no county is specified, then in the county in which the Owner’s main administrative office is located.

8.7.2 As a material consideration of the making of this Agreement, the modifications to this Agreement shall not be construed against the maker of said modifications.

8.7.3 Notwithstanding anything to the contrary in this Agreement, or in any document forming a part hereof, there shall be no mandatory arbitration for any dispute arising hereunder.

8.7.4 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. As part of that responsibility, Contractor shall enforce the Owner's alcohol-free, drug-free, tobacco-free, harassment-free and weapon-free policies and zones, which will require compliance with those policies and zones by Contractor's employees, subcontractors, and all other persons carrying out the Contract.

8.7.5 The Contractor may not assign its responsibilities, duties, obligations and rights under this Agreement, without the express written consent of the Owner. This does not prevent Contractor from engaging subcontractors to perform various phases of the Project, but Contractor shall be fully responsible to Owner for the work, actions and omissions of all such subcontractors.

8.7.6 No delay or omission by Owner in exercising any right or power accruing upon the noncompliance or failure of performance by Contractor of any of the provisions of this Agreement shall impair any such right or power or be construed to be a waiver thereof. A waiver by Owner of any of the covenants, conditions or agreements hereof to be performed by Contractor shall not be construed to be a waiver of any subsequent breach thereof or of any other covenant, condition or agreement herein contained.

8.7.7 Contractor stipulates that Owner is a Texas open-enrollment charter school, and as such, enjoys immunities from suit and liability as provided by the Constitution and laws of the State of Texas. By entering into this Agreement, Owner does not waive any of its immunities from suit and/or liability, except as otherwise specifically provided herein and as specifically authorized by law.

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

8.7.9 Felony Conviction Notice Section 44.034 of the Texas Education Code requires a person or business entity that enters into a contract with a charter school or school district must give advance notice to the school 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 [or charter school] may terminate a contract with a person or business entity if the [school] 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 [school] must compensate the person or business entity for the services performed before the termination of the contract." Subsection (c) states: "[...] this section does not apply to a publicly held corporation."

8.7.10 Conflict of Interest. Contractor must comply with all applicable conflict of interest laws. In accordance with Chapter 176, Local Government Code, the Owner requires individuals or businesses who contract business with the Owner to accurately complete and file a Conflict of Interest Questionnaire (CIQ) which is provided in the Project Manual. The CIQ form must be completed and submitted as part of the required contractor bid submission documents. The Owner is required to maintain a list of businesses, officers, Board members (and their family members) as well as other employees of Owner who are subject to this Local Government Code. Disclosures must be made and posted online by the Owner. Anyone who knowingly fails to file the statement commits a class C misdemeanor. A class C misdemeanor is punishable by a fine of up to \$500. Further, failure to complete the CIQ or falsification of the CIQ is grounds for contract termination per state law.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

9.1.1 At the end of the sentence insert “, as modified by the Owner.”

9.1.3 At the end of the sentence insert “, as modified by the Owner.”

EXHIBIT A – Insurance and Bonds

Refer to AIA A201-2017 Supplemental Instructions, Section 11.1

DOCUMENT 006100

BOND FORMS

- A. The Proposal and Payment Bond forms required for this Contract, published by the American Institute of Architects, are as follows: <https://www.aiacontracts.org/>
1. A310 – Bid Bond (2010 Edition) or equivalent acceptable to Owner.
 2. A312 – Payment Bond (2010 Edition) or equivalent acceptable to Owner.
 3. A312 – Performance Bond (2010 Edition) or equivalent acceptable to Owner.

END OF DOCUMENT

Bond No.: _____

TEXAS STATUTORY PERFORMANCE BOND

(Penalty of this bond must be 100% of contract amount)

KNOW ALL MEN BY THESE PRESENTS, that: _____

(hereinafter called the Principal), as principal, and _____,

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

(hereinafter called the Obligee) in the amount of _____

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

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the _____ day of _____, 20____, for

**IDEA PUBLIC SCHOOLS HARLINGEN PHASE II
HARLINGEN, TEXAS**

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

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

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

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this Instrument this

_____ day of _____, 20____, for

Principal (Seal)

Surety Address

By: _____

Surety (Seal)

Surety Telephone Number

By: _____
Attorney-in-Fact

END OF DOCUMENT

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AIA[®] Document A201[®] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Idea Public Schools -Safety and Security Improvements
Rio Grande Valley, Texas

THE OWNER:

(Name, legal status and address)

Idea Public Schools
2115 W. Pike Blvd.
Weslaco, Texas 78596

THE ARCHITECT:

(Name, legal status and address)

Gomez Mendez Saenz, Inc.
1150 Paredes Line Rd.
Brownsville, Texas 78521

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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User Notes:

(3B9ADA46)

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

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

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

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

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

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

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

§ 1.3 Capitalization

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

§ 1.4 Interpretation

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

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and 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 the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, 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 suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set

forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 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.

§ 2.3.2 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.

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

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

§ 2.3.5 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.

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 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 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 default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for 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. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

§ 3.1.3 The Contractor shall not be relieved of its 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 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit 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, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be 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 notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

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

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

§ 3.4 Labor and Materials

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

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

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

§ 3.5 Warranty

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

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

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

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

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 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 that an equitable adjustment be made 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, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately

suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably 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, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

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

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

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

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect 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 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.

§ 3.12.10.1 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 be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and 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.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 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, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or 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 construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its 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 and 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 the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with 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 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 an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

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

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

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 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.

§ 4.2 Administration of the Contract

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

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

§ 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 promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not

have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the 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, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or 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 order 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 Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

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

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

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

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one 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 that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will

similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

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

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; 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 assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 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 any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its 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 or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has 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 notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the

Work 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. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.2 Change Orders

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

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

§ 7.3 Construction Change Directives

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

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

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

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;

- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .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, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 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.

§ 7.3.7 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.

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

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

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

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor

change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 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 (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor’s control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 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.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

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

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

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

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

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

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

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot

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

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

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

§ 9.5.4 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 supplier 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 Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

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

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

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and 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 and suppliers 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 or supplier, except as may otherwise be required by law.

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

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

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

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

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' 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 shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

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

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

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

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

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

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented

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

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

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

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's 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. 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 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, (3) a written statement that the Contractor knows of no 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, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and 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, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance 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 the lien, claim, security interest, or encumbrance, 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, corrected, 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 the 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 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; 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 implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 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. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is 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, notice of the 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 and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. 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 notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the 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 by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

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

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

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The

Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 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.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds

of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement 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 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

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

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

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

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

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

§ 12.3 Acceptance of Nonconforming Work

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the

other. If either party attempts to make 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 the assignment.

§ 13.3 Rights and Remedies

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

§ 13.3.2 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 thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

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

§ 13.4.2 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 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

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

§ 13.4.5 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.

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

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

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

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, 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' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance,

the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

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

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under 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 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 Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract 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 relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by 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 under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 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.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 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.

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

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

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

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

Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

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

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

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

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

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

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

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

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

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

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

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

§ 15.4 Arbitration

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

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

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

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

§ 15.4.4 Consolidation or Joinder

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

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

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

**SUPPLEMENTARY CONDITIONS
TO THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
AIA DOCUMENT A201-2017
IDEA PUBLIC SCHOOLS**

- A. The Supplementary Conditions contain modifications and additions to the General Conditions of the Contract for Construction, AIA Document A201-2017 Edition. Where any part of the AIA General Conditions is modified or voided by the Supplementary Conditions, the unaltered portions shall remain in effect. The paragraph numbering system of AIA Document A-201-2017 Edition, is continued in the Supplementary Conditions.

- B. The following paragraphs and subparagraphs take precedence over the Agreement and General Conditions. Where any part of the Agreement or General Conditions are modified or deleted by the Supplementary Conditions, the unaltered provisions remain in effect.

- C. Paragraph numbers and titles refer to like numbers and titles in the Agreement and General Conditions.

ARTICLE 1 – GENERAL PROVISIONS

1.1 Basic Definitions

1.1.1 The Contract Documents

Delete Section 1.1.1 in its entirety and substitute the following:

1.1.1 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), Performance Bond, Labor and Material Payment Bond, Drawings, Specifications, Addenda issued prior to execution of the Contract, executed EDGAR or FEMA certifications if applicable, and other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to propose, instructions to Proposers, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's Proposal or portions of Addenda relating to proposal requirements).

To the extent any provision in the Supplementary Conditions to these AIA Document A201-2017 General Conditions, issued by Owner, conflicts with any provision in the Supplementary Conditions issued by the Architect; the Supplementary Conditions to these AIA Document A201-2017 General Conditions issued by Owner shall control.

Insert new 1.1.1.1 as follows:

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

1.1.2 In line 5 after “Sub-Subcontractor” insert the following, “(except as provided in Paragraph 5.3 and 5.4 hereof)”. In line 7 after “obligations” insert “of Contractor”.

1.1.3 The Work

Insert new 1.1.3.1 as follows:

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 Document, 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.

1.2 Correlation and Intent of the Contract Documents

1.2.1 At the end of the paragraph insert the following, “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 Contactor 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 attentions prior to submission of bids, Owner 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 in accordance with the Owner’s decision, without change to the Contract Sum or Contract Time. 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 referenced in the Contract Documents.”

Insert new 1.2.1.2 as follows:

- 1.2.1.2** In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:
- .1 Contract Modifications (such as Change Orders) signed by the Contractor and Owner.
 - .2 The Supplementary Conditions of the Owner
 - .3 The Agreement. (AIA Document A101-2017 or AIA Document A133-2019)
 - .4 The General Conditions of the Contract for Construction
 - .5 Addenda, with those of later date having precedence over those of earlier date
 - .6 Drawings and Specifications, 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 scale 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.

Insert new 1.2.1.3 as follows:

1.2.1.3 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, Contractor shall be deemed to have waived any claimed excuse 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.

1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service

1.5.1 Delete the first sentence in its entirety and replace with the following: "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." In line 6 delete "Architect or

Architect's consultants” and replace with: “Owner or Owners’ consultants.” Add the following at the end of the paragraph: “Neither the Contractor nor any subcontractor may utilize the Instruments of Service on other projects without the written consent of the Owner and the Architect.”

1.6 NOTICE

Delete the text of Section **1.6.1** in its entirety and substitute the following:

1.6.1 Written notice shall be deemed to have been duly served if delivered electronically and in person to the individual or a member of the firm or entity or to an officer at the corporation for which it was intended, or if delivered at or sent by certified mail, or 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 or other electronic communications to the offices of the person or corporation for which it was intended. For facsimiles or other electronic communications 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.

In the first sentence of Section **1.6.2** add the word “electronically and” after the word “writing”.

Add Section **1.9** as follows:

1.9 MISCELLANEOUS OTHER DEFINITIONS

1.9.1 ADDENDA, ADDENDUM

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

1.9.2 ALTERNATE PROPOSAL(S)

A separate amount stated on a separate Proposal Form which, if accepted by the Owner, will be added to or deducted from the Base Proposal. If accepted, the work that corresponds to the alternate proposal will become part of the agreement between Owner and Contractor. Alternate proposals shall remain valid for the same period of time as the Base Proposal after receipt of proposals, regardless if an Owner Contractor Agreement has been executed, unless indicated otherwise herein.

1.9.3 APPROVED, APPROVED EQUIVALENT, APPROVED EQUAL, OR EQUAL

The terms Approved, Approved Equivalent, Approved Equal, and Or Equal, relate to the substitution of products or systems approved in writing by the Architect. Refer to Paragraph 3.4.2, Substitution of Products and Systems, for procedures which must be followed after award of contract. The substitution procedure process to be followed prior to receipt of proposals is described in the Instructions to Bidders.

1.9.4 BASE PROPOSAL

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

1.9.5 CONTRACT TIME

The period of time which is established in the Contract Documents for Substantial Completion of the Work.

1.9.6 DATE OF AGREEMENT

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

1.9.7 DATE OF COMMENCEMENT OF THE WORK

The date of a written Notice to Proceed to the Contractor for a given portion of the Work. This date constitutes day zero (0) of the stated Contract Time. The Notice to Proceed will be issued after the District has received and validated the Contractor's Payment Bond, Performance Bond and Insurance' and adequate permits are in place to perform critical path activities for the Project.

1.9.8 DATE OF FINAL COMPLETION

The end of construction. See AIA Document A201-2017, Section 9.10.

1.9.9 DAY

The following days are referenced in the documents:

- .1 For the purpose of this agreement, "days" shall be defined as calendar days unless otherwise specified.
- .2 Calendar Days. Extensions of time granted for Regular Work Days lost, if any, will be converted to Calendar Days.
- .3 Holidays: The days officially recognized by the construction industry in this area as a holiday; normally limited to the observance days of New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and the day after and Christmas Day.
- .4 Regular Work Days: All calendar days except holidays, Saturdays, and Sundays. Requests for extensions of time shall be requested on the basis of Regular Work Days, and those days, if approved, will be converted to calendar days by multiplying by a factor of one and four-tenths (1.4).
- .5 No time extensions will be allowed due to inclement or adverse weather days.

1.9.10 NOTICE TO PROCEED

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

1.9.11 PROVIDE

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

1.9.12 PUNCH LIST

A comprehensive list prepared by the Contractor prior to Substantial Completion to establish all items to be completed or corrected; this list may be supplemented by the Architect or Owner. See AIA Document A201-2017, Section 9.8.

1.9.13 UNIT PRICES

A cost for a unit of work as described in the Contract Documents. The Owner may add or deduct Unit Price work at the amounts stated on the Proposal Form and such amounts shall not be subject to additional mark up by the Contractor or his subcontractors.”

ARTICLE 2 – OWNER

2.1 General

Delete the existing Paragraph 2.1.1 and replacing it with the following paragraph:

2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. All parties understand that only the Board of Directors for the Owner acting as a body corporate has the authority to bind the Owner with respect to all matters requiring the Board’s approval under current policy of the Board of Directors for the Owner, including, but not limited to, Change Orders. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority to bind the Owner with respect to matters requiring the Owner’s approval or authorization. The term “Owner” means the Owner or the Owner’s authorized representative.

2.1.2 Replace paragraph 2.1.2 in its entirety with the following:

Notice regarding construction project financing; Unlike a traditional school district where a bond election must be held and approved before major construction projects are undertaken, charter schools such as the Owner are authorized to use interim financing, traditional bank financing and to issue tax exempt bonds that do not require an election. Owner typically uses a combination of the above, and proceeds with construction using an available line of credit before issuing bonds to finance the completed project. Responding bidders and the selected contractor acknowledge the financing plan of the Owner and agree that they will comply with Owner’s notice to proceed and commence construction when and as directed, in order to meet Owner’s construction timelines.

2.2.2 Delete the Section in its entirety.

2.3 Information and Services Required of the Owner

2.3.4 In line 1 after, “characteristics” insert “and” and delete “and utility locations”. At the end of the paragraph insert the following, “In connection with the foregoing, Contractor shall be solely responsible for locating (and shall locate prior to performing any Work) all utility lines, telephone company lines and cable, sewer lines, water pipes, gas lines, 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”

2.3.6 Delete the words after the first comma and replace with, “, the Owner shall only provide electronic copies of the Contract Documents for use on this Project. All costs of reproduction are the responsibility of Contactor.”

2.4 Owner’s Right to Stop the Work

2.4 In line two after, “Contract Documents” insert the following, “or fails to remove and discharge (within ten (10) days) any lien filed upon Owner’s or 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”. In line 3 after “Work” insert “which is not performed in accordance with the Contract Documents”. At the end of the paragraph delete “.” and insert the following, “, 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.”

2.5 Owner’s Right to Carry Out the Work

2.5 OWNER’S RIGHT TO CARRY OUT THE WORK

Delete the text of Section **2.5**. in its entirety and substitute the following:

If the Contractor defaults or neglects to carry out the work in accordance with the Contract Documents and fails, after receipt of written notice from the Owner, to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the actual cost of correcting such deficiencies, including the Owner’s expenses and compensation for the Architect’s additional services and expenses made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to the 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 within thirty (30) days of receipt of written notice from the Owner therefor.

Insert new 2.5.1 as follows:

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

Insert new 2.6 and 2.6.1:

2.6 For any charges submitted for payment based upon costs incurred by the Contractor, the Owner shall be entitled to audit all records of the Contractor to verify the accuracy of costs. This right of audit will extend for three years after final completion, and the Contractor will maintain records reflecting all costs for this period and promptly provide access to the Owner upon request.

2.6.1 The Owner is not responsible for the acts and/or omissions of, or contractually

involved with, any subcontractors, suppliers of labor or materials, and/or their respective employees or agents or any other third-party claimants. Such claimants shall not constitute third party beneficiaries under this contract. The Contractor and/or his Surety solely shall deal with, take responsibility for, and be liable to such parties under this Contract. Contractor will indemnify and defend the Owner from any legal actions against Owner for unpaid bills of subcontractors.

Add Section 2.7 as follows:

2.7 OWNER'S RIGHT TO OCCUPY THE PROJECT

2.7.1 The Owner shall have the right to occupy or use without prejudice to the right of either party, any completed or largely completed portions of the project, notwithstanding the time for completing the entire work or such portions may not yet have expired. Such occupancy and use shall not constitute acceptance of any work not in accordance with the Contract Documents. If the Contractor determines that said occupancy may cause a delay to the completion of the project, he shall notify the Owner in writing immediately.

2.7.2 Refer to Article 11 Insurance and Bonds regarding property insurance requirements in the event of such occupancy.

2.7.3 If Contractor has not completed the obligations of the Contract Documents by the dates established by subsequent Amendments to the Agreement Between Owner and Contractor, the Owner shall have the right to occupy or use the entire project.

ARTICLE 3 – CONTRACTOR

3.2 Review of Contract Documents and Field Conditions by Contractor

3.2.1 At the end of the paragraph insert “No Change Orders shall be allowed for unforeseen or changed conditions, except to the extent such conditions were not foreseeable or discoverable by the Contractor using reasonable means prior to the Construction Phase, or to the extent such changes in conditions or scope are required by any permitting or regulatory agencies, or requested by Owner.”

3.2.2 Delete the first sentence and replace with “The Contractor shall carefully study and compare the various contract documents relative to each portion of the work, as well as the information furnished to Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to each portion of the work, and shall observe any conditions at the site affecting it.” In line 7 after “Architect” insert “and Owner”.

3.2.3 In line 3 after “Architect” insert, “and Owner in writing.”

3.2.4 Delete the Section in its entirety.

Insert new paragraphs 3.2.5, 3.2.6, 3.2.7 and 3.2.8 as follows:

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

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

3.2.7 “If, in the opinion of the Architect and Owner, the Contractor does not make a reasonable effort to comply with the above requirements of the Contract Documents and this causes the Architect or his consultants to expend an unreasonable amount of time in the discharge of the duties imposed on him by the Contract Documents, then the Contractor shall bear the cost of compensation for the Architect’s additional services made necessary by such failure. The Architect will give the Contractor prior notice of intent to bill for additional services related to 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, but no later than three (3) business days after having such knowledge, notify the Architect in writing, providing substantiation for the position. Any necessary changes, including substitutions of materials, shall be accomplished by appropriate Modification.

3.3 Supervision and Construction Procedures

3.3.1 In the last sentence delete “Unless the Architect objects to” and insert “If the Architect approves of”.

3.3.2 Add the following to the end of the paragraph:

As part of that responsibility, Contractor shall enforce the Owner's alcohol-free, drug-free, tobacco and e-cig-free, and weapon-free policies and zones, which will require compliance with those policies and zones by Contractor's employees, Subcontractors, and all other persons carrying out the Contract. Contractor shall also require adequate and appropriate dress of Contractor's employees, Subcontractors, and all other persons carrying out the Contract.

As to those matters for which the Contractor has responsibility under the terms of the Agreement, the Owner shall not be responsible for or have control or charge over the acts or omissions of the Contractor, Subcontractors or any of their agents or employees or any other persons for whom Contractor is responsible. It is understood and agreed that the relationship of Contractor to Owner shall be that of an independent contractor.

Nothing contained herein or inferable herefrom shall be deemed or construed (1) to make Contractor the agent, servant, or employee of the Owner or (2) create any partnership, joint venture or other association between Owner and Contractor. Any direction or instruction by Owner or any of its authorized representatives in respect of the Work shall be related to the results the Owner desires to obtain from the Work, and shall in no way affect Contractor's independent contractor status as described herein.

Insert new 3.3.4, 3.3.5, 3.3.6, 3.3.7, 3.3.8, 3.3.9, 3.3.10, 3.3.11 as follows:

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, but no later than 5 days, 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 benchmarks 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 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 elevations 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 mis-description 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 to the Specifications.

Nothing contained in Subparagraph 1.1.3 shall alter the responsibilities established in this

Subparagraph.

3.4 Labor and Materials

Delete Section **3.4.2** in its entirety and replace it with the following:

3.4.2 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 same meets 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.

- .1** 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.
- .2** After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products on the Work in place of those specified only under the conditions set forth in specification referring to Product Options and Substitutions.
- .3** Requests for substitution, received by the Architect later than forty five (45) days after "Notice to Proceed" or "Date of Commencement of the Work" (whichever occurs first), may result in additional costs to the Owner. Contractor agrees to reimburse the Owner through deductive Change Order to the Contract, for all costs associated with such requests.
- .4** By making request for substitutions based on Subparagraph 3.4.2 above, the Contractor

 - .1** represents that the Contractor has personally investigated the proposed substitute product and determined that it is equivalent or superior in all respects to that specified, and is suitable for the intended purpose;
 - .2** represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
 - .3** certifies that the cost data presented is complete and includes all related costs under this Contract except the 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 of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

- .5** Substitution requests shall be submitted on the forms included herein and in accordance with the process established in specification referring to Product Options and Substitutions.

Add the following Sections after Section **3.4.3**

3.4.3 At the end of the paragraph insert the following, “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 Subparagraph 8.3 hereof, Contractor shall be liable to Owner for all damages suffered by Owner.”

Insert new 3.4.4, 3.4.5, 3.4.6 and 3.4.7 as follows:

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.

.1 State law prohibits possession and/or use of alcohol and tobacco products on school property at all times.

.2 State law prohibits weapons or firearms on school property.

.3 There shall be zero tolerance for fraternization with students, teachers and any other school district personnel, Contractor will immediately remove any employee that violates this provision from the project.

.4 No glass bottles shall be brought on the construction site or Owner’s property by any construction personnel.

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.

3.4.7 Contractor agrees that it and its agents and employees will comply with the Immigration Reform and Control Act of 1986, as amended by the Immigration Act of 1990, or any subsequent legislation which regulates the employment of aliens. Contractor will not knowingly employ or knowingly allow any of its Subcontractors to employ, any illegal or undocumented aliens to perform any Work in connection with the Project. Contractor will retain and make available for inspection by Owner at the

Contractor's Primary place of business on the first day of employment or upon reasonable notice, a completed I-9 Employment Eligibility Verification Form and copies of associated employment eligibility and identity documentation for each person that Contractor directly employs on the jobsite. If Contractor receives actual knowledge of the unauthorized status of one of its jobsite employees, or if Contractor learns of facts that would lead a reasonable person to infer the unauthorized status of any jobsite employee, Contractor will immediately remove that employee from the jobsite, inform Owner, and shall require such Subcontractor to act in a similar fashion with respect to such Subcontractor's employees. Contractor agrees to have a provision on its subcontracts stating that each Subcontractor will have the duties and responsibilities with regard to its employees that the Contractor has agreed to in this section. The Contractor agrees to defend (at Owner's option, and with counsel acceptable to Owner), indemnify and hold harmless the Owner as to any fines or other liabilities of any kind arising out of or relating to Contractor's breach of this section or any immigration laws or regulations.

3.5 Warranty

Delete the text of Section 3.5.1 in its entirety and substitute the following:

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

At the end of paragraph 3.5.2 insert the following:

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.

Insert new 3.5.3, 3.5.4, 3.5.5, 3.5.6, 3.5.7, 3.5.8, and 3.5.9 as follows:

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 Paragraph 3.5 for all Work under the Contract.

3.5.4 In the event of failure in the Work, including a specified product, whether during

construction, or the correction period (which shall be one (1) year from the Date of Substantial Completion, except where a longer period is specified), the Contractor shall take prompt and appropriate measures to assure correction or replacement of the defective Work or any portion thereof, including manufactured products, whether notified by the Owner or the Architect. Upon correction of warranty items, the Contractor shall provide the Owner and Architect with written notification of said correction (including a brief description of the defect and corrective measures taken). This obligation shall survive acceptance of the Work under the Construction Contract.

3.5.5 The Contractual Correction Period for this Project is one (1) year from the date of Substantial Completion, except for any extended warranties as specified within the Contract Documents. Items of Work not completed until after the deadline for Substantial Completions shall have their warranties (general and any extended warranty periods) extended by the period of time between the deadline for Substantial Completion and the actual completion of the Work. Such warranties shall be submitted to the Owner in writing, documenting such time extensions. This correction period shall not restrict or modify extended warranties called for or provided on systems, equipment or other specific portions of the Work.

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 The Contractor shall accompany the Owner and Architect for a complete reinspection of the Project approximately eleven (11) months after the Date of Substantial Completion and shall promptly complete any observed or reported deficiencies in the Work, including any uncompleted Punch List items or outstanding and incomplete warranty items. The contractor shall provide written notification to the Owner and Architect when said Punch List items and/or additional deficiencies observed have been corrected. This obligation shall survive acceptance of the Work under the Construction Contract.

3.5.8 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.

3.5.9 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

Delete the paragraph in its entirety and replace with the following:

The Owner qualifies for exemption from State and Local Sales and Use Taxes pursuant to the provisions of Article 20.04(f) of the Texas Limited Sales, Excise and Use Tax Act. Exemption certificates comply with State Comptroller of Public Accounts Ruling No. 95-0.07. Any such exemption certificate issued in lieu of tax shall be subject to State Comptroller of Public Accounts Ruling No. 95-0.09, as amended. Failure by the Contractor or Subcontractors to take advantage of the Owner's exemption and to obtain such exemption certificate shall make him responsible for paying taxes incurred without additional cost to or reimbursement by the Owner.

3.7 Permits, Fees, Notices and Compliance with Laws

3.7.1 Delete entire section and replace with: Reference below sections for list of permits and fee payments.

a. Building Permit: Owner will make building permit application and pay directly to the City and plan review fees and building permit fees. The contractor shall be responsible for obtaining the approved permit and associated drawings from the City including any requirements for licensing or name change.

b. Permanent Tap and Impact Fees: All permanent tap and impact fees assessed by the City for water, sewer, storm sewer, driveway curb cuts, streets and traffic shall be paid by the Owner directly or by the Contractor through funds included in the Construction Contingency Allowance. The Contractor shall be responsible for applying for and obtaining any tap and impact permits. Permanent fees shall be those required for the permanent Work and shall not include any tap or impact fees required by the Contractor to complete their Work or any fees associated with temporary conditions due to phasing requirements.

c. Permanent Service Provider Work and Fees: All electric and gas service provider fees associated with bringing permanent power and permanent gas service from the distribution line to the transformer and or to the gas meter, including the transformer and gas meter themselves shall be paid for by the Contractor through funds included in the Contingency Allowance. The Contractor shall be responsible for contacting, coordinating, scheduling, obtaining any required forms (including those requiring Owner's signature), and coordination of the Service Provider's Work. The Contractor shall be responsible for the Work required to facilitate the Service Provider's Work, including but not limited to: transformer and meter mounting pads, removing trees, fences, grading, site preparation or other site items required for installation. The Contractor shall be responsible for any costs associated with obtaining non-permanent power or gas required for their Work or any Subcontractor's Work to maintain the project schedule.

d. Energy and Accessibility Work and Fees: The Owner shall be responsible for paying any Energy or Accessibility review fees and or Energy or Accessibility Inspection fees. If the Contractor constructs accessibility items that are not in accordance

with those designed in the Construction Documents, the Contractor shall be responsible for any Energy or Accessibility inspection fees associated with non-compliant Work or the result of the Work not being ready for Inspection when called. The Contractor will not be responsible for cost of Work or inspection fees if the accessibility items shown in the Construction Documents are not compliant with Accessibility codes or rules.

e. Miscellaneous Permits, Work and Inspection Fees: The Contractor shall be responsible for any and all state and local authorities' inspection fees. The Contractor shall be responsible for applying, obtaining and paying any and all fees associated with any Work not listed above in items a. through d. This shall include but not limited to: fire alarm, fencing & gates, security, fire sprinkler, lawn sprinkler, mechanical, electrical, plumbing, paving permits, temporary utilities or temporary taps, construction trailer, moving, additional building component permits or reviews for canopies, bleachers, cold-formed metal framing, 3-way contracts, etc.

f. SWPPP Plans: 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 paragraph 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. The Owner shall pay directly to the governing authority the cost of all permanent property utility assessments and similar utility connection charges.

3.7.2 In line 2 after "lawful orders" insert "and all other requirements".

Add new Section 3.7.2.1

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

3.7.3 Delete the section in its entirety and replace with the following:

If the Contractor performs Work which he knew or should have known to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, without notifying the Architect and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to the correction.

3.7.4 In line 8 after “will recommend” insert “to the Owner in writing,”. At the end of the paragraph insert the following, “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 In line 3 after “Owner and Architect” insert “in writing”.

Insert new 3.7.6 as follows:

3.7.6 The Contractor shall comply with the provisions of Section 22.08341 of the Texas Education Code. The form of certification by the Contractor shall be supplied by the Owner and must be supplemented by the Contractor as required by law, or as requested by the Owner.

3.8 Allowances

Delete Section **3.8.1** in its entirety and substitute the following:

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 and approve in writing.

3.8.3 At the end of the sentence insert the following, “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

Delete Section 3.9.1 in its entirety and substitute the following:

3.9.1 The Contractor shall employ a competent superintendent, project manager and necessary assistants who shall be in attendance at the Project site during performance of the Work, including Punch List work. The superintendent and project manager shall represent the Contractor, and unless provided otherwise in Section 3.1.1, communications given to the superintendent or project manager shall be binding as if given to the Contractor.

3.9.2 Delete the second and third sentences in their entirety and insert the following in lieu thereof, “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 Architect objects to any nominated superintendent. Such approval by the Owner shall not be unreasonably withheld.”

3.9.3 Delete in its entirety and replace with the following:

3.9.3 Superintendent shall become resident on the site as soon as possible after commencement of the Work, and shall remain assigned to this Work, and resident

on the site, throughout the course of the Work until items requiring completion or correction, identified at Substantial Completion, have been completed or corrected. A “resident on the site” is a person/worker who maintains his office and work area on the site and remains available to those working on site or visiting the site.

Insert new 3.9.4 and 3.9.5 as follows:

3.9.4 Project manager, while not required to be resident on the site, shall remain assigned to this Work, and be available on an as-needed basis throughout the course of the Work until items requiring completion or correction, identified at Substantial Completion, have been completed or corrected.

3.9.5 Owner shall be notified not less than 24 hours before any time superintendent will not be resident at the site for any reason except periodic illness; if the reason is due to illness, Owner shall be notified at the beginning of that day. Owner shall be notified of the identity of the acting superintendent. In the event the superintendent is absent from the site and notice has not been provided nor has an acting superintendent been assigned to the Work, then the Contractor is subject to being backcharged in the amount of \$250.00 for each occurrence.

3.10 Contractor’s Construction and Submittal Schedules

3.10.1 Delete the last sentence and add: “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 (baseline or “Target” activity dates). 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 In line 2 after “for the Architect’s” insert “and Owner’s”. In line 3 after “Architect’s” insert “and Owner’s”

Insert new 3.10.4, 3.10.5 and 3.10.6 as follows:

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 ensuring 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 Subparagraph 3.10.5 may be grounds for an extension of the Contract Time, if permitted under Subparagraph 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 or omission of Contractor, and (3) if Owner agrees to the Contract Sum adjustment prior to any rescheduling.

3.10.6 If the project is behind schedule, Contractor shall submit a "Recovery Plan" which will indicate the manner in which Contractor intends to get the Work back on schedule. Owner may require Contractor to take efforts to expedite progress of the Work in conformance with the progress anticipated by the schedule, which actions may include without limitations, increasing the number of workmen performing the Work, utilizing overtime work and requiring additional work shifts. In the event of such unexcused Project delays, any extra costs incurred by the Contractor to place the Project back on schedule shall be at Contractor's sole expense.

3.11 Documents and Samples at the Site

Insert new 3.11.1, 3.11.2, and 3.11.3 as follows:

3.11.1 The Contractor shall post all Addenda on Construction Documents prior to commencing work in the site.

3.11.2 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 Architectural Supplemental Instructions, RFI's, and 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.

3.11.3 Contractor shall at all times maintain job records, including, but not limited to, invoices, payment records, payroll records, daily reports, logs, diaries, and job meeting minutes, applicable to the project. Contractor shall make such reports and records available to inspection by the Owner, Architect, or their respective agents, within five (5) working days of request by Owner, Architect, or their respective agents.

3.12 Shop Drawings, Product Data and Samples

At Section **3.12.5**, add the following Sections:

- .1** At the end of the paragraph insert the following, "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 3.2.7 may be charged by the Architect in this event.
- .2** The Architect will take no action on Shop Drawings, Product Data, and Samples that have not first been certified, by stamped, signed notation, as having been checked and approved by the Contractor for use in the Work, or that are not specifically required by the Contract Documents.

At Section **3.12.9**, correct "Architect's approval" in the last line to read "Architect's acceptance" and add the following Section:

3.12.9.1 Deviation from the requirements of the Contract Documents indicated on shop Drawings, Product Data, and Samples, does not constitute the required notification "in writing.

Add Sections **3.12.11** and **3.12.12** as follows:

3.12.11 The Contractor shall submit complete Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents to the Architect at least thirty (30) days prior to the date the Contractor needs the reviewed submittals returned. Where colors are to be selected by the Architect, 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 contact for construction.

3.12.12 The Contractor shall submit digital PDF's of Shop Drawings, Product Data, and similar submittals in the proper format according to the procedures stipulated within the Contract Documents. Digitally submitted Shop Drawings will be reviewed and marked by the Architect and/or his consultants and returned to the Contractor for his use, distribution, correction or resubmittal as required. Contractor corrections or revisions shall be resubmitted to the Architect in accordance with same procedures. The digitally marked up prints will be retained by the Architect and his consultants. Samples shall be submitted directly to the Architect for review.

Add Section **3.12.13** as follows:

3.12.13 The Contractor shall provide MEP coordination drawings within a schedule mutually agreed upon by the Architect or Owner and prior to installing the Work; including site utilities. Show how all piping, ductwork, lights, conduit, equipment, etc. will fit into the ceiling space allotted, including clearances required by the manufacturer, by code, or in keeping with good construction practice. Space for all trade elements must be considered on the same drawing. Drawings shall include invert elevations and sections required to meeting intended purpose. The Contractor may propose an alternate method of accomplishing MEP coordination. If the alternate method is approved by the Architect or Owner, it may be utilized.

3.13 Use of Site

Insert new 3.13.1, 3.13.2, 3.13.3 and 3.13.4 as follows:

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 but in no event shall the equipment be left on the Property longer than two (2) days after its completed use. 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.

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

Add Section **3.14.3** as follows:

3.14.3 Leave all chases, holes and openings, straight and true, of proper size, and cut them into existing work as may be necessary for the proper installation of the work. Consult with all Subcontractors concerned, regarding proper locations and size. In case of conflict between requirement for cutting and patching and any other requirement of the Work, submit request for direction before proceeding with the Work. In case of failure to leave or cut them in the proper place, openings shall be cut afterward at no expense to the Owner. No excessive cutting will be permitted, nor shall any piers or other structural members be cut without prior approval. After such work has been installed, satisfactorily and carefully fit around, close up, repair, patch, and point up all cuts. Work shall be done with proper tools by workmen of the particular trade to which work belongs and shall be done without extra expense to the Owner. No description of specific cutting, patching, digging, etc., required for the work under a Specification Section that may be required for the proper accommodation of that work to the work of other trades shall relieve the Contractor from responsibility described above.

3.15 Cleaning Up

Insert new 3.15.3 as follows:

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.

Delete Section 3.18 in its entirety and replace with the following:

§ 3.18 INDEMNIFICATION, ACKNOWLEDGEMENT OF LIMITED LIABILITY, ETC.

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and its directors, officers, agents and employees (the "Indemnitees") from and against claims, damages, losses and expenses, including without limitation, attorney's fees, arising out of or relating to the Work of this Contract, provided that such claim, damage, loss or expense is attributable to

bodily injury, sickness, disease, or death, or injury to or destruction of tangible property (other than the Work itself), including loss of use resulting therefrom, to the extent such claim, damage, loss or expense is caused, in whole or in part, by the negligence or fault, strict liability, breach or violation of a statute, ordinance, governmental regulation, standard, or rule, or breach of contract by any person or entity other than the Indemnitees, including that of the Contractor, a Subcontractor of any tier, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable.

3.18.2 To the fullest extent permitted by law, and in addition to the indemnity obligation under Section 3.18.1, the Contractor shall indemnify and hold harmless the Indemnitees from and against claims, damages, losses and expenses, including without limitation, attorney's fees, arising out of or relating to the Work of this Contract, provided that such claim, damage, loss or expense is attributable to bodily injury or death of the Contractor, a Subcontractor of any tier, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, even to the extent such claim, damage, loss or expense is alleged to be caused by the sole, partial, contributory, concurrent, or joint wrongful conduct of the Indemnitees, any of their agents or employees, and any third parties under the control or supervision of the Indemnitees. The Contractor expressly acknowledges that it is indemnifying the Indemnitees from their concurrent negligence by the indemnity provided for in this section. The Contractor's obligation hereunder shall apply even where the Indemnitees are alleged to be solely negligent.

§ 3.18.3 In the event of any claim alleging partial, contributory, concurrent, or joint wrongful conduct of the Indemnitees that is not covered under the Contractor's indemnity obligations under Section 3.18.2, the Contractor shall be obligated to reimburse the Owner for its reasonable attorneys' fees in proportion to the Contractor's liability, as such may be agreed to by the Contractor or found by a trier of fact.

§ 3.18.4 The defense, indemnity and reimbursement obligations in Sections 3.18.1, 3.18.2, and 3.18.3 shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to the party or persons described in this Section 3.18, or elsewhere in the Contract Documents. These defense, indemnity and reimbursement obligations shall not be limited by any limitation on the amount or type of compensation, benefits or damages payable by or for the Contractor under any workers' compensation or other benefits laws, or by the limits of any insurance of the Contractor. These defense, indemnity and reimbursement obligations shall survive completion of the Work or early termination of the Contract.

§ 3.18.5 The Contractor acknowledges that the Owner shall have no obligation to supervise performance of the Work or Work Site for safety, nor does the Owner exercise any control over the means and methods of construction employed by the

Contractor, Subcontractor of any tier, or anyone directly or indirectly employed by them. The Contractor further acknowledges that the Owner's liability for claims of personal injury, death, or property damage are limited by Section 95.003 of the Texas Civil Practice and Remedies Code, as well as the privileges and immunities enjoyed by Owner as a governmental unit of the State of Texas.

§ 3.18.6 The Contractor shall provide workers' compensation insurance coverage for each employee of the Contractor employed on the Project, and shall require the same of its Subcontractors of any tier. The Contractor and each Subcontractor of any tier shall be required to provide certificates of this coverage to the Owner. The foregoing indemnification obligations shall not be limited in any way by limitations on the amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefits acts or other employee benefits acts.

§ 3.18.7 To the extent any of the obligations in this Section 3.18 violate applicable law, the obligation(s) will be reformed or severed to the minimum extent necessary to comply with applicable law in order to provide the maximum protection to the Indemnitees.

§ 3.18.8 The Contractor's defense, indemnity and hold-harmless obligations under this Agreement shall survive completion of the Work or early termination of the Agreement.

Insert new 3.19, 3.19.1 and 3.19.2 as follows:

3.19 RECORD DRAWINGS

Add the following Paragraphs in their entirety:

3.19 REPRODUCIBLE RECORD DRAWINGS

3.19.1 At the completion of the Project, the Contractor shall submit to the Owner a complete set of drawings of electronic files with all changes made during construction, including concealed mechanical, electrical and plumbing items. Drafting shall be compatible with original drawings and the Contractor shall submit these as hard copies. The record drawings shall exclude the seal of the Architect and/or Engineer and shall have a statement added to indicate the purpose of the drawings (i.e, "RECORD DRAWING"). The Contractor shall also submit to the Owner electronic copies containing the following. Refer to the Project Manual, Division 1 specifications for a more expanded definition of close-out documentation required:

- .1 Final Record Drawings;
- .2 Final Specifications;
- .3 Copy of final Construction Contract, including all Change Orders.
- .4 CPR;
- .5 AEA;

.6 Copies of minutes to all Project meetings.

3.19.2 The Contractor shall also provide the Owner with electronic files of Record Drawings. The record drawings including specifications shall be 100% complete (including properly dated and executed warranties, complete technical instructions to the Owner, etc.) prior to delivery to the Architect for review. The record documents must be delivered to the Architect thirty (30) days prior to receipt of the Contractor's Final Application for Payment. The record drawings shall exclude the seal of the Architect and/or Engineer and shall have a statement added to indicate the purpose of the drawings (i.e., "RECORD DRAWING").

Insert new 3.20 and 3.21 as follows:

3.20 ANTITRUST VIOLATIONS

3.20.1 Contractor hereby assigns to Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 U.S.C.A. Section 1 et.seq. (1973). The Contractor shall include this provision in his contracts with each Subcontractor and Supplier. Each Subcontractor shall include such provision in contracts with Sub-subcontractors and suppliers.

3.21 THIRD-PARTY BENEFICIARY

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

Insert new Section 3.20

3.20 PREVAILING WAGE RATES

Salaries or wages of all labor, including services of superintendent, assistant superintendent, field engineers, job supervisors, clerks, security personnel, truck drivers, mechanics, laborers, and all others necessary for the proper conduct of the Work and for the time employed on the Work, shall not be less than the usual wage scale paid such workers in the vicinity of the Project for the type of Work set forth under this Agreement.

ARTICLE 4 – ARCHITECT

4.1 General

4.2 Administration of the Contract

Delete Section **4.2.2** in its entirety and substitute the following:

4.2.2 The Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar

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

4.2.3 Delete the last two sentences in their entirety and insert "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 immediately 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 immediately notify Owner in writing of the failure of any of the foregoing parties to carry out the Work in accordance with the Contract Documents."

Delete Section **4.2.6** in its entirety and substitute the following:

4.2.6 The Architect shall have authority to reject Work that does not conform to the Contract Documents. The Architect shall be required to promptly notify the Owner of any non-conforming Work, along with supporting documentation sufficient for the Owner to ascertain the specific conditions, and shall reject such non-conforming Work unless the Owner objects to the rejection in writing within forty-eight (48) hours of such notification. Whenever the Architect considers it necessary or advisable for implementation of the intent of the Contract documents, the Architect will have authority to require inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work is fabricated, installed or completed. Performance of any additional inspection or testing, which would result in additional cost to the Owner, shall require advance notice to and approval of the Owner. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work, except when the Contractor's inability to perform the Work is a result of design flaw, error or omission.

4.2.7 In line 1, after "approve" insert "or reject,". In line 2, delete "but only for the limited purpose of checking".

4.2.12 Delete the last sentence in this paragraph.

Delete Section **4.2.13** in its entirety and substitute the following:

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

ARTICLE 5 – SUBCONTRACTORS

5.1 Definitions

5.1.1 In line 2, after "site" delete "." and insert "or to otherwise furnish labor, material, or other services with respect to a portion of the Work."

5.1.2 In line 2, after "site" delete "." and insert "or to otherwise furnish labor, material, or other services with respect to a portion of the Work."

At the end of Section **5.2.4**, add the following sentence:

Prior to such change the Contractor shall notify the Architect of his intent and reasons for such proposed changes.

5.3 Subcontractual Relations

Insert new 5.3.1 as follows:

5.3.1 All subcontracts shall be in written form.

5.4 Contingent Assignment of Subcontracts

Add at the end of 5.4.1

"Such assignment shall not constitute a waiver by Owner of its rights against Contractor because of defaults, delays and defects for which a Subcontractor or material vendor may also be liable. Contractor indemnifies and holds Owner harmless from any failure or refusal of any Subcontractor to comply with any provision of the Contract Documents."

5.4.3 Delete the second sentence in its entirety.

Insert new paragraph 5.5 as follows:

5.5 Contractor shall immediately 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. Contractor further

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acknowledges and agrees, and shall require the same from all Subcontractors and their Sub-Subcontractors, that Owner's property is to be considered public property for all purposes under the law and is exempt from attachment, execution, and forced sale under Section 43.002 of the Texas Property Code, and that no lien shall be filed against Owner's property, as such would be void and unenforceable Texas law.

ARTICLE 6 – CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTOR

6.2 Mutual Responsibility

6.2.4 In line 1 delete “wrongfully”.

ARTICLE 7 – CHANGES IN THE WORK

7.1 General

7.1.1 In line 1, before “be” add “only”.

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

A Change Order shall be based on agreement among the Owner, Contractor, and Architect, except when the Contract balance is amended as a result of Owner's Right to Carry out the Work under Section 2.5 or the Owner's assessment of liquidated damages as allowed by the Contract Documents. A Construction Change Directive requires agreement by the Owner or the Owner's representative and Architect, and may or may not be agreed to by the Contractor; an order for a minor change may be issued by the Architect alone.

7.1.3 At the end of the paragraph insert “Except as permitted in Paragraph 7.3 and 9.7, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order, or by the procedures applicable to a Construction Change Directive. 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

Insert new 7.2.2, 7.2.3, 7.2.4, 7.2.4.1, 7.2.5, 7.2.5.1, 7.2.5.1.1, 7.2.5.1.2, 7.2.5.1.3, 7.2.5.1.4 and 7.2.5.2 as follows:

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, the Contract Time, and the construction schedule.

7.2.3 Contractor shall keep and submit to Owner copies of a log for all Change Orders, no less than once per month.

7.2.4 Changes in the Work: The Owner, without invalidating the Contract and without approval of the surety, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions. The Contractor may recommend and propose changes in the Work to be considered by the Owner. The Contract Sum and the Contract Time will only be adjusted in accordance by Change Orders processed and approved by the Owner.

7.2.4.1 No written order or oral order from the Owner (which terms as used in this paragraph shall include direction, instruction, interpretation, or determination) which fails to address Contract Time or Contract Sum shall be treated as a change in the Contract which affects the Contract Time or the Contract Sum unless the Contractor gives the Owner written notice within ten (10) days of such written or oral order stating the date, circumstances, source of the order and that the Contractor regards the order to be a change in the Contract which affects the Contract Time or the Contract Sum. Except as provided above, no order, oral statement, or direction of the Owner shall be treated as a change in the Work to be addressed by a Change Order or entitle the Contractor to an adjustment in the Contract Time or the Contract Sum.

7.2.5 Change Proposals: The Contractor shall review and respond to all requests for a Change Proposal submitted by the Architect in accordance with the following:

7.2.5.1 In responding to a request for a Change Proposal, the Contractor shall furnish a lump sum proposal supported by a complete breakdown as described hereafter and satisfactory to the Owner indicating the total estimated cost for performance of the changed Work including the applicable percentage for overhead and profit. To permit evaluation by the Owner, any request for a time extension must be justified and presented in adequate detail, showing that the proposed change will cause a delay in meeting one or more Milestones. The contractor shall make all reasonable efforts to rearrange the work to avoid time extensions. Any extension that may be approved shall be net of any delays caused by or due to the fault or negligence of the Contractor or which are otherwise the responsibility of the Contractor and shall be also net of any contingency or "float" time in the Project Schedules.

7.2.5.1.1 The Contractor 's cost proposal given in response to a request for a Change Proposal shall, unless otherwise consented to in writing by the Owner, contain the following items for changed Work performed directly by the Contractor or performed by a Subcontractor:

- a) Estimated cost, using any discounts to the trades, of the materials and supplies used, which shall be itemized completely to include unit cost, quantity and total cost.

- b) Estimated wages paid for labor performing the additional Work, which shall be itemized completely to include for each trade and skill level the hourly rate, total hours and total cost. Such wages shall include labor required for performance of the changed Work only. Crew foremen may be included. All other supervisors shall be excluded and shall be considered as a part of the Overhead Markup.
- c) Estimated cost for construction equipment used on the changed Work, to include rental rates or owned equipment rates for such items of equipment while in use directly on the changed Work covered by the Change Proposal, which shall be itemized completely to include type(s), the number(s) of each, hourly rate, hours, total cost and state sales tax paid. Rental or owned equipment rates shall be no greater than those established by market conditions for the local area. As used herein the terms "construction equipment" and "equipment" shall include wheeled vehicles and tools. The Owner retains the right of purchase or lease purchase if cumulative rental costs make this an economically sound option.
- d) Estimated reasonable transportation costs for delivery and handling of materials, additional construction equipment, and/or new items of installed equipment, if applicable, which shall be itemized separately.
- e) Estimated off-site storage costs for periods in excess of thirty (30) calendar days, if applicable, covering protection of new items or equipment to be installed.
- f) A percentage for labor burdens added to the wages computed in accordance with (b) above. Such percentage for labor burden shall be delivered in writing by the Contractor to the Owner for approval by the Owner within ten (10) days after issuance of the Notice to Proceed. This percentage shall reimburse the Contractor for the actual cost of FICA, State and Federal Unemployment Insurance, insurance computed on wages, small tools (tools having an original value of \$500 or less, consumable supplies, and training and fringe benefits, if applicable. The premium portion of any overtime (which must be approved in advance by the Owner in writing) shall not include an allowance for small tools (toolshaving an original value of \$500 or less), consumable supplies, training or fringe benefits.

7.2.5.1.2 In submitting the response to a Change Order Proposal, the mark-up on the items in (a)-(f) above may be included for the Contractor or Subcontractor directly performing the changed Work covered by items (a)-(f) above pursuant to Section 7.5 below. Such ten percent (10%) mark-up is intended to cover all field supervision above the level of crew foreman, field and general home office services and expenses, interference with other work or any other consequential effects, adjustments to progress

schedules and all other overhead (including bond and insurance not computed on wages) and profit of the Contractor or Subcontractor directly performing the changed Work.

7.2.5.1.3 In submitting the response to a Change Order Proposal, a mark-up of five percent (5%) of any payments to a Subcontractor may be included for the Contractor and any Subcontractors which supervise the Subcontractor directly performing the changed Work. Such five percent (5%) mark-up is intended to fully reimburse the Contractor and any Subcontractor supervising the Subcontractor directly performing the changed Work for overhead expenses and profit.

7.2.5.1.4 In cases where changes in the Work performed by the Contractor with its own forces or by a Subcontractor result in a credit (i.e., cost savings) to the Owner, the credit shall be limited to direct costs to the Contractor or Subcontractor, which include the labor burden described in paragraph 7.2.5.1.1(f) above; that is, no overhead or profit shall be credited. In cases where an individual change in the Work results in both credits and charges to the Owner, the Contractor will add the overhead and profit percentages indicated in this Section above only to the "net" charge to the Owner (i.e., based upon the amount by which the total charges exceed the total credits to the Owner).

7.2.5.2 The Contractor's response to a request for a Change Proposal shall be submitted in writing within ten (10) days after the Owner's delivery to the Contractor of the Change Proposal request, unless the Owner extends such period of time in writing. Changes in the Contract Time and/or Contract Sum will be negotiated as soon as practicable thereafter. If agreement is reached, the agreed changes will be incorporated in a Change Order and such Change Order shall be signed by the Contractor and the Owner. If (i) the Contractor fails to timely respond to a request for a Change Proposal, (ii) the Owner and the Contractor do not agree as to changes in the Contract Time or Contract Sum, or (iii) the Owner concludes that the time needed for obtaining a proposal from the Contractor and negotiating a Change Order would significantly damage the Project and/or impose significant added cost, the Owner may, at its option, issue a Unilateral Change Order without the agreement of the Contractor as to changes in the Contract Time and Contract Sum. In all events, the Contractor will diligently proceed to accomplish the Work set forth in the Change Order issued by the Owner. Contractor shall not be required to perform or subcontract work for removal, remediation, and/or transportation of hazardous materials.

7.3 Construction Change Directives

7.3.1 At the end of the paragraph insert "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, no less than once per month."

7.4 Minor Changes in the Work

7.4 Substitute "Owner" for "Architect" in all sentences in this paragraph.

Add Section 7.5 as follows:

7.5 ALLOWABLE MARKUPS FOR CHANGES IN THE WORK

7.5.1 Unless otherwise directed, the procedure and markup of the costs for additional work shall be determined in the following manner:

.1 Upon Change Proposal request, the Contractor shall quote the cost for changes in the work showing separately, credits and additional costs broken down by headings used in the Schedule of Values. Further breakdown into units of labor and materials may be required if agreement on cost cannot be reached using the breakdown by headings. The final cost shall be the amount of the Total Contract Value Change shown on the Change Proposal signed by the Contractor and Owner. For general construction work, not subcontracted, the Contractor shall consider as costs the actual invoice amount for additional materials, the sales tax on additional materials when applicable, the wages paid for additional direct labor, plus the Contractor's usual markup of wages to cover additional labor related costs such as insurance, taxes and fringe benefits.

.2 On changes executed within the Owner's Contingency Allowance, Contractor shall have included costs for combined overhead and profit, to the extent permitted by the Contract Documents, and General Conditions costs, including the cost of superintendents, field office expense, temporary facilities and services, small hand tools, construction equipment not specifically provided for the change in hand, home office expense, bond and building insurance premiums, and managing the Subcontractor's work, in his Base Contract amount. Allowed overhead and profit fee on Owner's Contingency Allowance changes to be included in the total cost to the Owner shall be based as follows:

.1 For each Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, ten percent (10%) of the costs defined in Section 7.2.5.1.1.

.2 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractors.

7.5.2 If any additional Work is authorized outside of or in excess of the Owner's Contingency Allowance, the combined overhead and profit for this work shall be based as follows:

.1 For the Contractor, for Work performed by the Contractor's own forces, a maximum total markup of ten percent (10%) of the actual costs defined in Section 7.2.5.1.1.

.2 For Work performed by the Contractor's Subcontractor(s), five percent (5%) of the amount due the Subcontractor(s).

.3 For each Subcontractor or Sub-subcontractor involved, for work performed by that Subcontractor's or Sub-subcontractor's own forces, a maximum markup of ten percent (10%) of the actual cost.

.4 For each Subcontractor, for work performed by the Subcontractor's Sub-subcontractors, five percent (5%) of the amount due the Sub-subcontractor.

.5 The combined total markup from all categories and tiers above shall not exceed fifteen percent (15%).

.6 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7.

7.5.3 In order to facilitate checking of quotations for extras or credits, all proposals, (except those so minor that their propriety can be seen by inspection), shall be accompanied by a complete and detailed itemization of costs including labor, materials, and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change be approved without such itemization.

7.5.4 Change orders, as they are accepted by the Owner, shall be entered under heading "Change Orders" in the next current Request for Payment.

7.5.5 All credits to or deductions from the Contract Sum shall be calculated using the same methodology set forth in this Section 7.5, with credits for overhead and profit calculated pursuant to 7.2.5.1.4.

ARTICLE 8 – TIME

8.1 Definitions

Insert new 8.1.1.1 and 8.1.1.2 as follows:

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 and specified Milestones (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 Section 8.3 per calendar day that the Work remains incomplete beyond the time fixed for completion of the Project and specified Milestones. 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 and are not a penalty. 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.

8.3 Delays and Extensions of Time

Delete Section **8.3.1** in its entirety and substitute the following:

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

unforeseeable causes beyond the Contractor's control, or by other causes which 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. **There shall be no extension of the Contract Time for inclement or adverse weather.** For any excusable delays, Contractor will be solely responsible for its own costs arising in connection with any such delay, and no adjustment will be made to the Contract Sum (including extended general conditions) to account for damages to the Contractor.

Add Sections **8.3.4** and **8.3.5** as follows:

8.3.4 The parties hereto agree that time is of the essence of this Contract and that pecuniary damages would be suffered by the Owner if the Contractor does not substantially complete the Work called for in the Contract Document by the specified dates, which damages are, by their very nature, difficult of ascertainment. It is therefore expressly agreed, as a part of the consideration inducing the Owner to execute this Contract that the Owner may deduct from the final payment made to the Contractor a sum equal to **Two Hundred Dollars (\$200.00)** per day, per phase or Milestone Completion date defined in the Contract Documents for each and every Calendar Day beyond the agreed date which the Contractor has agreed to for the Substantial Completion of each Milestone and/or Substantial Completion of all Work included in the Contract Documents. In the event that Substantial Completion of each Milestone or portion of the Work as defined in the Contract Documents is not achieved by the date specified for that portion of the Work, liquidated damages as specified in the Contract Documents shall be deducted from the current and future pay applications for each calendar day beyond that portion's Substantial Completion date until the missed portion of Work is completed. In the event that the Contractor completes the missed portion of Work on or before the next Milestone Completion date, in addition to completing the portion of Work specified for that next Milestone Completion date, the liquidated damages accrued for that specific missed portion of Work may be included in the next pay application for Owner's review and payment pursuant to the terms of this Agreement. Liquidated damages for missed Milestone Completion dates for portions of the Work as specified in this subsection shall be in addition to any liquidated damages which may accrue for the failure to reach Substantial Completion of the entire Work. It is expressly understood that said sums per day are agreed upon as a fair estimate of the pecuniary damages which will be sustained by the Owner in the event that the Work is not substantially completed within the agreed time, or with the legally extended time, if any, otherwise provided for herein. Said sums shall be considered as liquidated damages only, and in no sense shall be considered a penalty or forfeiture; said damage being caused by additional compensation to personnel, and other miscellaneous increased costs, all of which are difficult of exact ascertainment. Except as otherwise provided in the Contract Documents, the liquidated damages assessed herein shall be Owner's sole remedy for time delays between the deadlines for substantial completion for all or a portion of the Work and Contractor's achievement of substantial completion.

8.3.5 Failure to complete and close-out the Project within sixty (60) days after the scheduled Substantial Completion date will additionally entitle the Owner to deduct from the final payment made to the Contractor a sum equal to **Fifty Dollars (\$50.00)** for each

and every Calendar Day beyond the 60-day close-out period. It is expressly understood that said sum per day is agreed upon as a fair estimate of the pecuniary damages which will be sustained by the Owner in the event that the Project close-out does not occur on a timely basis. Said sum shall be considered as liquidated damages only, and in no sense shall be considered a penalty or forfeiture; said damage being caused by additional compensation to personnel, and other miscellaneous increased costs, all of which are difficult of exact ascertainment.

Add Sections **8.3.6** and **8.3.7** as follows:

8.3.6 Extensions of time granted for causes described herein will be granted on the basis of 1.4 Calendar Days extension for each Regular Working Day lost.

8.3.7 Each Bidder shall include in his proposed Contract Time an adequate allowance of inclement or adverse weather days. **Contractor shall not be entitled to any extension of the Contract Time adjustment to the Contract Sum due to inclement or adverse weather.**

ARTICLE 9 – PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

Add Section **9.1.1.1** as follows:

9.1.1.1 The Owner is exempt from payment of Texas State Sales Tax on materials required for the Work. Therefore, to comply with the law, the Contract Sum shall be broken down into the amount of cost for labor and the amount of cost for materials. This breakdown shall be provided by the Contractor within ten (10) days of award of Contract.

9.2 Schedule of Values

9.2 In line 2 after “schedule of values to the” insert “Owner and”. In line 3 delete “prepared in the form and supported by the data to substantiate its accuracy required by the Architect” and insert, “equal 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.”

Add the following Sections:

9.2.1 General Contractor’s cost for Contractor’s fee, bonds and insurance,

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General Conditions, etc., shall be listed as individual line items.

9.2.2 Schedule of Values shall break each line into materials and labor. Once approved by the Owner and Architect, it shall be used as basis for reviewing Application for Payment but not be taken as evidence of market or other value.

9.2.3 Contractor's cost for various construction items shall be detailed. For example, concrete work shall be subdivided into footings, grade beams, floor slabs, paving, etc. These subdivisions shall appear as individual line items.

9.2.4 On major subcontracts, such as mechanical, electrical, and plumbing, the Schedule shall indicated line items and amounts in detail, (for example; underground, major equipment, fixtures, installation of fixtures, start up, etc.)

9.2.5 Costs for subcontract work shall be listed without any addition of General Contractor's costs for overhead, profit or supervision.

9.3 Applications for Payment

Delete Sections **9.3.1** and **9.3.2** in their entirety and replace them with the following:

9.3.1 No later than the 1st of each month, Contractor shall submit an itemized Application for Payment, supported by such data sustaining the Contractor's right to payment as the Owner or Architect may require, and reflecting retainage, as provided elsewhere in the Construction Documents. Information on the form shall be divided into the same last day of the month preceding, which shall also be the basis of payment or as agreed by the Owner, Contractor and Architect by verification at the site, prior to submittal.

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 which have been properly authorized by Construction Change Directives but not yet included in Change Orders.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment (1) incorporated in the Work, (2) suitably stored at the site, or (3) suitably stored at some off-site location 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 for off-site storage, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site as follows:

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

Payments for materials or equipment stored on or off the site shall be conditioned upon submission by the Contractor of Bills of Sale or such other procedures satisfactory to the Owner to establish the Owner's title to such materials or equipment or otherwise protect the Owner's interest, including applicable insurance (naming the Owner as insured) and transportation to the site for those materials and equipment stored off the site.

9.3.3 At the end of the paragraph insert, "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.

Add Section **9.3.4** as follows:

9.3.4 The Contractor shall submit requests electronically, using AIA Document G702, Application and Certificate of Payment format, as the cover sheet. Continuation sheets showing in detail the amounts requested, etc., shall be included using AIA Document G703, Continuation Sheet, or a computerized version of these documents previously approved for use. The information provided on the continuation sheets in the Description of the Work and Scheduled Values columns shall match the corresponding information shown on the approved Schedule of Values. All blank spaces on AIA Document G702, Application and Certificate of Payment, must be completed and the signatures of the Contractor and Notary Public shall be original on each form. By submitting his application for payment, the Contractor certifies that the individual signing the application is authorized to do so.

9.5 Decisions to Withhold Certification

9.5.1.3 Add to the end of the sentence, "and failure to provide certifications of payment by the Contractor and its subcontractors and suppliers"

9.5.1.6 In line 1 delete "and" and insert "or".

9.5.1.7 In line 1 delete "repeated".

Insert new 9.5.5 as follows:

9.5.5 Notwithstanding any provision contained within this Article, if the Work has not attained Substantial Completion with 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.

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9.6 Progress Payments

9.6.1 At the end of the paragraph insert the following, “Owner may refuse to make payment on any Certificate for Payment for any default of the Contractor, including, but not limited to, those defaults set forth in Clauses 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.”

9.6.4 In line 5 delete “except as may otherwise be required by law.”

9.6.7 Delete in its entirety.

9.7 Failure of Payment

9.7 In line 2, after “not” add “, for reasons other than a default of the Contract, including, but not limited to, those defaults set forth in Clauses 9.5.1.1 through 9.5.1.7”. In line 3 delete “or awarded by binding dispute resolution”.

Insert new 9.7.1 as follows:

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’s 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 In line 1 after “thereof” add “(which Owner agrees to accept separately)”.

At Section **9.8.2**, add the following sentence at the end:

Should the Architect determine that the Contractor’s List of Items to be Completed or Corrected lacks sufficient detail or requires extensive supplementation, the list will be returned to the Contractor for revision, and inspection for determining the Date of Substantial Completion will be delayed until the List submitted is a reasonable representation of the work to be done.

Insert new 9.8.6 and 9.8.7 as follows:

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 having 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.

The following items are a partial specific list of requirements, as applicable to the Project, that must be completed prior to established Substantial Completion of all portions of the work (Including the Substantial Completion of the commissioning phase), unless otherwise approved by the Owner.

1. All fire alarm system components must be completed and demonstrated to the Owner.
2. Local fire marshal approval certificate, or similar Certificate of Occupancy from the governing agency, must be delivered to the Owner.
3. All exterior clean-up and landscaping must be complete.
4. All final interior clean-up must be complete.
5. All HVAC air and water balancing must be complete.
6. All required commissioning must be complete.
7. All Energy Management Systems must be complete and fully operational and demonstrated to the Owner.
8. All communications equipment, telephone system, and P.A. systems must be complete and demonstrated to the Owner.
9. All final lockset cores must be installed and all final Owner directed keying completed.
10. All room plaques and exterior signage must be completed.
11. All Owner demonstrations must be completed including kitchen equipment, HVAC equipment, plumbing equipment, and electrical equipment.
12. A final certificate of occupancy.

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 may be reported to the Contractor's surety. In this report, the Contractor and surety will be informed that, should correction remain incomplete for thirty (30) days, the Owner will assess liquidated damages as defined in the Contract Documents and may initiate action to complete corrective work out of the remaining Contract funds in accordance with Article 14.

.1 Should corrective work following Substantial Completion require more than

one reinspection after notification by the Contractor that corrections are complete, the cost of subsequent inspections may also be deducted from the Contract funds remaining unpaid to the Contractor.

9.10 Final Completion and Final Payment

9.10.2 Add at the end of the first sentence “(7) Record Drawings, and (8) Maintenance and instruction Manuals, in electronic format.”

9.10.4 Add at the end “.5 faulty or defective Work appearing after Substantial Completion.”

Add Section **9.10.6** as follows:

9.10.6 Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor forty-five (45) days after Substantial Completion of the Work unless otherwise stipulated in the Certificate of Substantial Completion, provided the Work has then been completed, the Contract fully performed, all Contract Close Out Documents have been submitted, reviewed and approved by the Architect and Owner, and the Final Certificate for Payment has been issued by the Architect. The final payment will not be made until all of these conditions have been satisfied.

ARTICLE 10 – SAFETY OF PERSONS AND PROPERTY

10.2 Safety of Persons and Property

10.2.3 At the end of the paragraph insert “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 immediately repaired by the Contractor.”

10.2.8 Delete the Section in its entirety and replace with the following:

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

Add Sections **10.2.9** as follows:

10.2.9 The Contractor shall be responsible for taking all precautions necessary to protect the Work in place from any foreseeable weather conditions which could cause any potential damage to portions or all Work in place. The Contractor shall be responsible for performing all repairs and/or replacement of any Work that results from foreseeable weather conditions, with no extension to the Contract Time or Contract Sum.

10.3 Hazardous Materials

Delete the text of Section **10.3.1** in its entirety and substitute the following:

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 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. The Owner, Contractor and Architect shall then proceed in the same manner described in section 10.3.2.

Delete the text of Sections **10.3.3** and **10.3.4** in their entirety.

ARTICLE 11 – INSURANCE AND BONDS

11.1 Contractor’s Liability Insurance

Insert new 11.1.1.2 through 11.1.1.6.5 as follows:

11.1.1.2 SCHEDULE OF INSURANCE COVERAGES

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

<u>Coverage</u>	<u>Amounts and Limits</u>
Worker’s Compensation Employer’s Liability:	Statutory Limits
Bodily Injury by Accident	\$1,000,000/each accident
Bodily Injury by Disease	\$1,000,000/each employee
Bodily Injury by Disease	\$1,000,000/Policy Limit
 <u>Commercial General Liability</u>	
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).	
 <u>Comprehensive Automobile Liability</u>	 \$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 Indemnitees (Section 3.18) as additional insured, and state that this insurance is

primary insurance as regards to any other insurance carried by the Indemnified Parties (see Section 3.18).

11.1.1.2.2 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 (Indemnitees);
- .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 fifteen (15) 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 the indemnified Party (see 3.18));
- .6 the following coverage:
 - a. Premises/Operations;
 - b. Independent Contractors;
 - c. Completed Operations 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.

11.1.1.3 Umbrella Excess Liability Insurance

Bodily Injury and	\$4,000,000 per occurrence
Property Damage	\$4,000,000 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 (3.18) as additional named 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. Insurance carried by the Contractor shall

be with insurers having Best's Rating of A-V or better.

11.1.1.4 Further, Contractor shall require all Subcontractors to carry similar insurance coverage and limits of liability as required under this Article 11 related to Worker's Compensation, Commercial Liability and Comprehensive Automotive, adjusted to the nature of Subcontractor's operations before any Work commences.

11.1.1.5 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.

11.2 Owner's Liability Insurance

Insert new paragraphs 11.2.1.1 through 11.2.1.4:

11.2.1.1 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.

11.2.1.2 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.

11.2.1.3 The Owner shall obtain and furnish Builder's Risk insurance. The Contractor is responsible to pay \$10,000 of each Builder's Risk claim deductible, or the actual value of the deductible amount, whichever is the lesser amount.

11.2.1.4 The Contractor shall be responsible for obtaining an Installation Floater Insurance Policy for any protections desired beyond the policy limits provided by the Owner's Builder's Risk Policy.

11.3 Waivers of Subrogation

Replace paragraph 11.3.1 and 11.3.2 with the following language and insert new paragraph 11.3.3 as follows:

11.3.1 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 Article 11 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.

11.3.2 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 11.3.3. 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.

11.3.3 The Owner shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement.

Insert new Section 11.6

§11.6 PERFORMANCE BOND AND PAYMENT BOND

11.6.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as required by Chapter 2253 of the Texas Government Code.

11.6.2 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.

11.6.3 The Performance Bond Form and the Payment Bond form required herein shall be executed and submitted to the Architect in duplicate prior to commencement of the Work. The surety companies must be acceptable to the Owner and licensed admitted carriers in the State of Texas; and the surety shall be listed, with appropriate underwriting limitation, on the U.S. Treasury Department Circular No. 570 (Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies).

11.6.4 Each bond shall be of penal sum equal to 100% of the estimated cost of construction and shall be compatible with the provisions of the governing authority. The Contractor shall file copies of each bond with the county clerk and furnish the Owner with a file receipt. The bonds shall remain in full force throughout the contractual correction period of the Agreement. The Work will not be started until the bonds and issuing companies have been accepted as satisfactory by the Owner. The original bonds will be delivered to the Owner with an authorized power of attorney attached thereto. If a fixed contract amount has not been determined at the time the Contract is awarded, the penal sums of the performance and payment bonds delivered to the Owner must each be in an amount equal to the project budget, as specified in the request for qualifications or request for sealed proposal. The Contractor shall deliver the bonds not later than the tenth (10th) day after the date the Contractor executes this Agreement unless the Contractor furnishes a bid bond or other financial security acceptable to the Owner to ensure that the Contractor will furnish the required performance and payment bonds when a Contract Sum is finalized.

Notwithstanding any other provision, the Performance Bond and the Payment Bond shall be provided in accordance with the following. Upon execution of the Contract, Contractor shall provide performance and payment bonds on forms in accordance with the requirements of the Texas Government Code and this contract. The penal sum of the payment and performance bonds shall be equal to the Contract sum.

11.6.5 Claims must be sent to the Contractor and his Surety, in accordance with Texas Government Code, Chapter 2253. The Owner will furnish in accordance with such Article, a copy of the payment bond, as provided therein, to claimants upon request. All claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or his Surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no responsibility because of any representation by any agent or employee.

ARTICLE 12 – UNCOVERING AND CORRECTION OF WORK

12.1 Uncovering of Work

12.1.1 At the end of the paragraph delete “.” and insert “or Contract Sum.”

12.2 Correction of the Work

12.2.1 Before Substantial Completion

12.2.1 In line 1 after “”by the Architect” insert “as incomplete, defective,”.
After Section 12.2.1 add the following Sections:

12.2.1.1 In the event of failure of a specified project, either during construction or the correction period, the Contractor shall take appropriate measures with the manufacturer of the product to assure correction or replacement of the defective products.

12.2.1.2 Refer to Closeout Procedures in Division One for further terms regarding warranties which will be required prior to final payment.

12.2.2.1 In line 2, after “of the” add “entire”; after “Work” delete “or designated portion thereof or after the date for commencement of warranties established under Subparagraph 9.9.1,” and substitute “(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,”. In line 6, after “condition.” delete the next two grammatical sentences and substitute the following: “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. Upon receipt of written notice from the Owner of the discovery of any defects in the Work, the Contractor shall commence remedy of such defects and replace any property damaged therefrom occurring within the warranty and guarantee period within forty-eight (48) hours. Work forces to repair or replace damaged property shall be maintained on a consistent basis until resolution. The Owner remedy work directly if the damage or failure constitutes and emergency threatening the life, health, or safety or could create significant consequential damages. In the case of emergency repairs, the Contractor shall compensate the Owner for reasonable costs incurred. If the Contractor, after notice, fails to proceed promptly and remedy within the period of time for remedial action within this paragraph or which has been otherwise agreed to in writing, in compliance with the terms of the warranty and guarantee, the Owner may have the defects corrected and the Contractor and/or its surety shall be liable for all actual expenses incurred by Owner, Architect or Project Manager. This obligation under this Subparagraph 12.2.2.1 shall survive acceptance of the Work under the Contract and termination of the Contract by the Owner.”

Replace paragraph 12.2.2.2 with the following language and delete paragraph 12.2.2.3

12.2.2.2 Approximately eleven (11) months after the Substantial Completion date(s), Contractor shall accompany Owner and Architect on an inspection and tour of the building and Project site and shall note and call out 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. If the Contractor, after notice, fails to proceed promptly and remedy within ten (10) days or within another period of time which has been agreed to in writing, in compliance with the terms of the warranty and guarantee, the Owner may have the defects corrected and the Contractor and/or its surety shall be liable for all actual expenses incurred by Owner, Architect or Project Manager.

12.2.4 In line 2, after “caused” add “in whole or in part”. In line 3, after “that is” add “defective or otherwise”.

12.2.5 In line 2, after “Documents” delete “.” and insert “or under law or in equity.” In line 2 delete “one year”.

12.3 Acceptance of Nonconforming Work

12.3 In line 1, after “is” insert “defective or otherwise”.

ARTICLE 13 – MISCELLANEOUS PROVISIONS

13.1 Deleted everything after “located”.

13.3 Rights and Remedies

13.3.1 At the end of the paragraph delete “.” and insert “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 Tests and Inspections

13.4.1 Delete the last two grammatical sentences in their entirety and insert the following, “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.”

13.4.2 Delete the last grammatical sentence in its entirety.

13.4.3 In line 2, after “Documents,” delete the remainder of the subparagraph and substitute the following: “or reveal faulty or otherwise defective Work, or if the necessity

of any such testing, inspection, or approval procedure 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."

13.4.4 In line 1 delete, "unless otherwise required by the Contract Documents,". In Line 2 delete, "promptly delivered to the Architect" and insert, "delivered to Owner, unless such testing or inspection services are arranged by Owner."

13.5 Interest

Delete paragraph in its entirety and replaced with the following, "An overdue payment bears interest at the legal rate established by the Texas Government Code, currently in Section 2251.025. Any such payment for any undisputed amounts shall be deemed overdue on the thirty-first (31st) day after Owner receives an acceptable invoice from Contractor."

Insert new Article 13.6 as follows:

13.6 WRITTEN NOTICE

Written notice accompanied with electronic notification shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer at the corporation for which it was intended, or if delivered at or sent by registered or certified mail, 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. For 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.

13.7 Equal Opportunity

13.7.1 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."

13.7.1.1 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.

Insert new 13.8 as follows:

13.8 Certification of Asbestos-Free Project

13.8.1 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 at least one officer of the construction company.

13.8.2 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.

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

ARTICLE 14 – TERMINATION OF SUSPENSION OF THE CONTRACT

14.1 Termination by the Contractor

14.1.1.3 After “documents” add “other than what is permitted in Section 9.6.1.

14.1.1.4 Delete paragraph in its entirety.

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

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

14.1.4 Delete paragraph in its entirety and insert the following in lieu thereof, “Owner shall not be responsible for damages for loss of anticipated profits on Work not performed on account of any termination described in Subparagraphs 14.1.1 and 14.1.2.”

14.2 Termination by the Owner for Cause

14.2.1.1 Delete “repeatedly” and insert “and equipment” after “materials.”

14.2.1.3 Delete “repeatedly” and delete “or” at the end of the paragraph.

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14.2.1.4 Delete subparagraph in its entirety and replace with the following, “disregards the instructions of Architect or Owner (when such instructions are based on the requirements of the Contract Documents); or”

Insert new 14.2.1.5 and 14.2.1.6 as follows:

14.2.1.5 “is adjudged a 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 laws; or

14.2.1.6 “otherwise does not fully comply with the Contract Documents.”

14.2.2 In line 1, after “exist” delete “, and upon certification by the Initial Decision Maker that sufficient cause exists to justify such action”.

14.2.4 Delete paragraph in its entirety and replace with the following, “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.”

Insert new paragraph 14.2.5, 14.2.6, and 14.2.7 as follows:

14.2.5 In addition to Owner’s right to remove Contractor from any part of Work pursuant to the Contract Documents, 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 Subparagraph 14.2.5.

14.2.7 Upon a determination by a court of competent jurisdiction that termination of Contractor pursuant to Subparagraph 14.2.1 was wrongful, such termination will be deemed converted to a termination for convenience pursuant to Subparagraph 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 Subparagraph 14.2.5."

14.4.3 Delete the section in its entirety and replace with "In the case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work in accordance with the contract documents executed up to the effective date of termination. Under no circumstances shall the Contractor be compensated for loss of revenue or anticipated profits from portions of the work not completed."

ARTICLE 15 – CLAIMS AND DISPUTES

15.1.1 Definitions

Delete the text of Section **15.1.1** in its entirety and substitute the following:

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of 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, Architect, and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. Nothing herein shall require the Owner to give prior notice or make or file a Claim in order to assess liquidated damages provided for in the Contract Documents.

15.1.2 Time Limits on Claims

In line 2 delete "in accordance with the requirements of the binding dispute resolution method selected in the Agreement". In line 4 delete "," after "applicable law" and insert "." In line 4 delete "but in any case more than 10 years after the date of Substantial Completion of the Work." Delete last grammatical sentence in its entirety.

15.1.3 Notice of Claims

15.1.3.1 In line 2 after "shall be initiated by" add "written". At the end of the paragraph insert the following, "Said written notice of claims shall state specifically the reason for the claim, the date or dates of the cause of causes of the claim, and if any extension of time is requested, the number of days of extension requested."

Delete the second sentence of Section **15.1.3.1** in its entirety and substitute the following:

Claims by either party must be initiated within ninety (90) days after occurrence of the event giving rise to such Claim or within ninety (90) days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

15.1.5 Claims for Additional Cost

After the first sentence insert the following, "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 evaluated unless so made."

15.1.6 Claims for Additional Time

Delete the text of **Section 15.1.6.2** in its entirety and substitute the following:

15.1.6 .2 Adverse weather conditions shall not be the basis for a Claim for additional time or additions to the Contract Sum.

Insert new 15.1.6.3as follows:

15.1.6.3 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 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete the text of Section **15.1.7** in its entirety.

15.2 Initial Decision

Delete the text of Section **15.2.1** in its entirety and substitute the following:

15.2.1 Claims, excluding those alleging an error or omission by the Architect or those arising after expiration of the period for correction of the Work (in which case the Owner shall be the Initial Decision Maker), 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. If the parties are unable to agree, any claim, dispute or matters arising out of the contract between the Architect, Owner and Contractor or any combination of those parties shall be submitted to a court of appropriate jurisdiction.

15.2.2 In line 3 after "Approve the Claim" insert "in whole or in part".

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

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 therefore; 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, if both parties so agree, and subject to legal or equitable proceedings in a court having jurisdiction thereof. It is understood and agreed that, in the event that any dispute, controversy, or conflict arises during the design and construction of the Project or following its completion, the parties hereto will cooperate in good faith, if possible, to resolve the issues without resorting to litigation.

15.2.6 Delete in its entirety. Add Intentionally Deleted.

15.2.6.1 Delete in its entirety.

15.2.8 Delete in its entirety.

Add the following Section **15.2.9**

15.2.9 The prevailing party in any judicial proceeding arising from the Contract Documents shall recover its reasonable and necessary attorneys' fees.

15.3 Mediation

Delete sections 15.3.1, 15.3.2, 15.3.3 and 15.3.4 in their entirety and replace with the following:

§ **15.3.1** If the parties to a dispute arising out of or related to the Contract agree to submit the Claim to mediation following a decision by the Initial Decision Maker, the parties shall share the mediator's fee and any filing fees equally. Mediation shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof. Nothing in the Contract Documents shall be construed as requiring mandatory mediation prior to litigation.

15.4 Arbitration

Delete 15.4.1, 15.4.1.1, 15.4.2, and 15.4.3 in their entirety and insert the following in lieu thereof, "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."

15.4.4 Consolidation or Joinder

Delete 15.4.4.1, 15.4.4.2 and 15.4.4.3 in their entirety.

DOCUMENT 008200

WAGES

GENERAL REQUIREMENTS

Salaries or wages of all labor, including services of superintendent, assistant superintendent, field engineers, job supervisors, clerks, security personnel, truck drivers, mechanics, laborers, and all others necessary for the proper conduct of the Work and for the time employed on the Work, shall not be less than the usual wage scale paid such workers in the vicinity of the Project for the type of Work set forth under this Agreement.

END OF DOCUMENT

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SECTION 011400

WORK RESTRICTIONS

PART 1 - GENERAL

1.1 USE OF PREMISES

Use of Site: Limit use of premises to work in areas indicated.

1. Owner Occupancy: The site is occupied. The Contractor will have the full use of the site at all times.
2. Contractor Parking and Work area: On site. No parking is allowed on existing parking lots within an existing campus.
3. Access to the Site: Access to the site shall be as determined by the Contractor.
4. Security: Contractor shall assume full responsibility for the protection and security of immediate construction site. Owner will not provide any additional security for the Contractor areas.
5. Work Hours: The project subject to the work hours permitted by the City. The Owner will not compensate the Contractor for Time, Contract Amount, or Penalties associated with not abiding by work hours.

1.2 WORKER CONDUCT AND APPEARANCE - WORK RULES

B. General: The conduct and appearance of each worker at the jobsite is of paramount importance. The Owner reserves the right to require any worker to be reassigned to work outside the Owner's property.

1. Privacy: Conduct all work of the Contract with the maximum effort to maintain the privacy of the Owner's operations, staff and students. Do not permit workers to peer into other areas of the building visible from the work area. Invasion of privacy is a major infraction of the work rules. For work on existing sites in operation, provide a visual screen barrier on the temporary construction fence along all perimeters that are exposed to sidewalks or direct visibility from the school.
2. Conduct and Demeanor: All construction workers shall treat all other construction workers, Owner's staff, students, and the public professionally with respect and courtesy.
3. Physical Appearance: Require each worker to dress appropriately in a clean, neat, and professional manner.
4. Radios and Television: The use of entertainment devices including personal devices with headphones or earphones is strictly prohibited at all times. Control the volume of communication radios and loudspeakers to avoid creating a nuisance.
5. Smoking: Smoking is strictly prohibited inside any building, inside the work area, and anywhere on the Owner's property, except in designated smoking permitted areas.
6. Language: The use of foul language is strictly prohibited.
7. Loud Conduct: Screaming, yelling, and unnecessary loud conduct is strictly prohibited.
8. Physical Actions: Running, horseplay, fighting, and other unprofessional conduct is strictly prohibited. Fighting is a major infraction of the work rules.
9. Stealing: Stealing of any material, objects, furnishings, equipment, fixtures, supplies, clothing, or other items is prohibited and a major infraction.
10. Sexual Harassment: All forms of physical and verbal sexual harassment including, without limitation: touching; whistling; sexually explicit stories, jokes, drawings, photos, and representations; exhibitionism; and all other sexually oriented offensive behavior is strictly prohibited.
11. Roaming: Construction personnel shall not be allowed to roam, or wander about, the existing facilities.
12. Eating: Construction personnel shall not use the existing Dining Area for breakfast, lunch, or dinner.
13. Parking: Construction personnel shall only park in designated areas reserved for construction parking.

WORK RESTRICTIONS

14. Penalties: First infraction of the work rules shall result in a verbal warning from the Owner. Second infractions shall result in being requested to leave the Owner's property. Owner's decision in such matters shall be final with no exceptions.
- C. Warnings and Dismissal: For minor infraction of the rules, the Owner may issue a warning. Only one warning will be allowed per worker, and a second infraction shall result in immediate dismissal of the worker from the Owner's property. For major infractions such as invasion of privacy, the worker shall be dismissed immediately without warning and possibly subject to criminal prosecution.
 - D. Notification of Workers: Clearly notify and educate each worker about these Work Rules and the requirements for worker conduct and appearance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 012100

ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing allowances.
 - 1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
 - 2. Where material allowance is indicated as a unit cost, this is to establish the quality of material, and Contractor shall be responsible for ascertaining the total quantity required, including waste, necessary to complete the installation.
- B. Where material allowance is indicated as a unit cost, this is to establish the quality of material, and Contractor shall be responsible for ascertaining the total quantity required, including waste, necessary to complete the installation.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.3 NET ALLOWANCES

- A. Unless noted otherwise, listed allowances shall be Net Allowances. This means that the General Contractor mark-ups for overhead, profit, and indirect time related to Allowance expenditures shall be included in the Base Proposal, and outside of the Net Allowance amounts.
- B. Contractor shall only be entitled to expend Allowance funds with written authorization from the Owner and Architect.
- C. At Project closeout, unused Allowance amounts will be credited to Owner by Change Order.

1.4 ADJUSTMENTS OF COSTS

- A. Should net cost be different than specified amount of allowance, contract sum will be adjusted accordingly by Change Order.
 - 1. Amount of Change Order will recognize changes in handling costs at site, labor, installation costs, overhead, profit, and other expenses caused by selection under allowance.
 - 2. For products specified under unit cost allowance, unit cost shall apply to quantity listed in Schedule of Values.

3. For products specified under unit allowance, unit cost allowance shall apply to quantities actually used with nominal amount for waste, as determined by receipts, invoices or by field measurement.

- B. Submit claims for anticipated additional costs at site, or other expenses caused by selection under allowance, prior to execution of work.
- C. Submit documentation for actual additional costs at site, or other expenses caused by selection under allowance within 60 days after completion of execution of Work.
- D. Failure to submit claims within designated time will constitute waiver of claims for additional costs.
- E. At contract closeout, reflect approved changes in contract amounts in final statement of accounting.

1.5 OWNER'S CONTINGENCY

A. Following shall apply to Owner's Contingency Allowance:

- 1. Contractor shall include profit and overhead in the contingency allowance. This means that the General Contractor mark-ups for overhead, profit, and indirect time related to Owner's Contingency expenditures shall be included in the Base Proposal, and outside of the Net Owner's Contingency amounts.
- 2. Contractor shall proceed with accomplishing work only after receiving properly executed contingency authorization executed by the Owner.
- 3. Any unexpended portion of the Owner's Contingency shall be returned to the Owner.
- 4. At completion of project, Architect will reconcile work accomplished through properly executed contingency allowance authorizations and provide for refund of unused portion of contingency to the Owner through properly executed change order.

1.6 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Arrange for and process shop drawings, product data, and samples.
- D. Provide warranties for products and maintenance installations.

1.7 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 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.

3.2 SCHEDULE OF ALLOWANCES

- A. ALLOWANCE NO.1: **OWNER'S CONTINGENCY ALLOWANCE:** Include the amount of **\$100,000.00** for use according to the Owner's instructions.

END OF SECTION

SECTION 012200

UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit Price: Amount proposed by Contractor as a price per unit of measurement for materials, equipment, or services added to or deducted from Contract Sum by Change Order if estimated quantities of Work required by Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
- B. Unit Price Schedule: A schedule of unit prices is included at end of this Section. Specification Sections referenced in Schedule contain requirements for materials described under each unit price.
- C. Quote cost of each Unit Price on the Proposal Form.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 UNIT PRICE SCHEDULE

Add or Remove from Project Scope:

- A. Door Closer
- B. Removable Door Mullion
- C. Lockset
- D. Continuous Wired Piano Hinge
- E. 1-1/2 Pair Butt Wired Door Hinges
- F. Card Reader
- G. CCTV Camera
- H. Vape Sensor
- I. License Plate Camera
- J. Door Power Supply

END OF SECTION

SECTION 012300

ALTERNATES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. Alternate: An amount proposed by bidders for certain work that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.2 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates. Execute accepted alternates under the same conditions as other work of the Contract.
- C. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate. Acceptance of Alternates will be exercised at option of Owner in any order or combination.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. Install License Plate Camera as noted on MEP Drawings.
- B. Install Hallway Camera at Toilets as noted on MEP Drawings

END OF SECTION

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SECTION 012510

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDE

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of Contract.

1.2 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by Contractor after award of Contract are considered requests for "substitutions". Following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by Owner or Architect.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.
- C. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
- D. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 SUBMITTALS

- A. Submit three copies of each request for product substitution complete with properly executed form and all supporting data.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Due to limited time available during bidding period, request for substitutions will not be evaluated by Architect until after "Notice of Award". For period of fifteen (15) consecutive calendar days after "Notice of Award", substitutions will be considered by Architect. Requests for substitution after that time will be considered or rejected at the discretion of the Architect.
- B. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents, and are not subject to requirements specified in this Section.
- C. Bids shall be based upon providing specified materials, products, Acceptable Manufacturers, organizations, and applications; identified in these Specifications or indicated on Drawings.
- D. Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples for construction activities not complying with Contract Documents does not constitute acceptable or valid request for substitution, nor does it constitute approval.

SUBSTITUTION PROCEDURES

- E. Contractor's substitution request will be received and considered by Architect when one or more of following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with general intent of Contract Documents.
 3. Request is timely, fully documented and properly submitted.
 4. Specified product or method of construction cannot be provided within Contract Time. Request will not be considered if product or method cannot be provided as result of failure to pursue Work promptly or coordinate activities properly.
 5. Specified product or method of construction cannot receive necessary approval by governing authority, and requested substitution can be approved.
 6. Substantial advantage is offered Owner, in terms of cost, time, energy conservation or other considerations, after deducting additional responsibilities Owner must assume. Additional responsibilities for Owner may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 7. Specified product or method of construction cannot be provided in manner that is compatible with other materials, and where Contractor certifies that substitution will overcome incompatibility.
 8. Specified product or method of construction cannot be coordinated with other materials, and where Contractor certifies that proposed substitution can be coordinated.
 9. Specified product or method of construction cannot provide warranty required by Contract Documents and where Contractor certifies that proposed substitution provide required warranty.
- F. Burden of proof of equality rests with Contractor.
- G. Submit separate request for each Product Substitution, on Architect's standard form "Substitution Request Form 012510", copy at end of this section, supported with complete data, technical literature, drawings and samples as appropriate, including:
1. Comparison of qualities of proposed substitution with that specified. (Submit data for both products)
 2. Changes required in other elements of work because of substitution.
 3. Effect on construction schedule.
 4. Cost data comparing proposed substitution with Product specified.
 5. Required license fees or royalties.
 6. Availability of maintenance service, and source of replacement materials.
 7. List of appropriate installations.
- H. By making request for substitution, Contractor:
1. Represents and warrants that Contractor has personally investigated proposed substitution product and determined that it is equal to or superior in all respects to that specified;
 2. Represents and warrants that Contractor will provide same warranties or bonds for substitution That Contractor would for that specified.
 3. Certifies that cost data presented is complete and includes all related costs under this Contract except for Architect's redesign cost, and waives all claims for additional costs related to substitution which may subsequently become apparent; and
 4. Will coordinate installation of accepted substitute, making such other changes as may be required to make Work complete in all respects.
- I. Architect will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of decision to accept or reject requested substitution.

SUBSTITUTION PROCEDURES

- J. Owner and Architect reserve right to accept or reject proposed substitutions. Each request shall state amount of savings to Owner, if substitution is accepted. Acceptance of proposed substitution does not constitute approval or inclusion in Architect's and Consultant's Documents. Pay applications certification, change orders, and certificate of substantial completion will contain such qualification.
- K. Cost of testing required for analysis of proposed substitution shall be paid for by Contractor at testing agency selected and approved by Architect.
- L. Should substitution be accepted, Contractor shall be responsible to make necessary adjustments in Work which may be affected as result of substitution at no additional cost.
- M. Contractor warrants that substituted material or system will perform same as original specified material or system would have performed. Should accepted substitution fail to perform as required, Contractor shall replace substitute material or system with that specified and bear costs incurred thereby.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SUBSTITUTION REQUEST FORM 012510

To Architect: _____

Project Name: _____

SPECIFIED ITEM:

Section	Page	Paragraph	Description
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The undersigned General Contractor requests consideration of the following:

PROPOSED SUBSTITUTION: _____

1. Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified, both on the proposed substitution and the original specified product.
2. Attached data also includes description of changes to Contract Documents which proposed substitution will require for its proper installation.

The undersigned General Contractor states that the following paragraphs, unless modified on attachments, are correct.

1. The proposed substitution does not affect dimensions shown on Drawings.
2. The undersigned General Contractor will pay for changes to the building design, including engineering design, detailing and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The General Contractor further states that the function, appearance and quality of the Proposed Substitution are equivalent or superior to the Specified Item. The General Contractor further warrants that specification Section 012510, Article 2.1 Paragraph G intent has been met.

5. Cost Reduction to the Owner: \$

ACCEPTANCES:

- | | | |
|-----------------------------------|-------------|---------------------|
| 1. General Contractor Acceptance: | Date: _____ | Representing: _____ |
| _____ | | |
| 2. Owner Acceptance: | Date: _____ | Representing: _____ |
| _____ | | |
| 3. Architect Acceptance: | Date: _____ | Representing: _____ |
| _____ | | |

- _____ Accepted as Noted
- _____ Not Accepted
- _____ Received too late
- _____ Resubmit with complete information

SECTION 012600

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Refer to Division 01 Section "Substitution Procedures" for administrative procedures for handling requests for substitutions made after Contract award.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on Architect's standard form "Architect's Supplemental Instructions".

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect or Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in the Supplementary Conditions and after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change including the information requested in the Supplemental Conditions, which includes:
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect using Contractor's Standard Form.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

CONTRACT MODIFICATION PROCEDURES

4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time. The Contractor shall make all efforts to resequence work as necessary to reduce the number of reduce an increase in Contract Time.
5. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.

1.4 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. 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. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 3. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- 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.
 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on Architects standard form "Change Order".

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on Architects standard form "Construction Change Directive". Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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SECTION 012900

PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 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. Submittals Schedule.
- 2. Submit the Schedule of Values to Architect 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. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
- 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value. Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
- 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.

PAYMENT PROCEDURES

- a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
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. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and 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.
 1. If the Agreement does not state payment dates, establish dates at preconstruction conference.
- C. Payment Application Forms: Use the AIA Document G702 form (amended to add the Owner's Independent Project Manager signature block) and AIA Document G703 Continuation Sheets as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect 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 signed and notarized electronic copies of each Application for Payment to Architect 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.

PAYMENT PROCEDURES

- F. Waivers of Mechanic's Lien: With each Application for Payment, the Contractor shall submit waivers of mechanic's lien. If requested by the Owner, also submit waiver 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. With each Application for Payment, submit Conditional Lien Release waivers for the work performed and invoiced, before deduction for retainage and, if requested by the Owner, copies of such Conditional Lien Release waivers from all Subcontractors and Suppliers.
 2. With each Application for Payment, submit Unconditional Lien Release waivers for the work performed and paid for based on the prior Application for Payment. If requested by the Owner, provide copies of Unconditional Lien Release waivers from all Subcontractors and Suppliers.
 3. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- 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. Products and Materials List.
 5. Schedule of unit prices.
 6. Submittals Schedule (preliminary if not final).
 7. List of Contractor's staff assignments.
 8. List of Contractor's principal consultants.
 9. Copies of building permits.
 10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 11. Initial progress report.
 12. Report of pre-construction conference.
 13. Aerial (drone) photographs.
- H. 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.
- I. 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" from the Subcontractors and the General Contractor and/or statutory form or release.
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens" from the Subcontractors and the General Contractor and/or statutory form or release.
 6. AIA Document G707, "Consent of Surety to Final Payment".
 7. Evidence that claims have been settled.

PAYMENT PROCEDURES

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.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

CONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project _____

Job No. _____

On receipt by the signer of this document of a check from _____
(*maker of check*) in the sum of \$ _____ payable to _____ (*payee*
or payees of check) and when the check has been properly endorsed and has been paid by the bank on
which it is drawn, this document becomes effective to release any mechanic's lien right, any right arising
from a payment bond that complies with a state or federal statute, any common law payment bond right,
any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or
payment rights for persons in the signer's position that the signer has on the property of
_____ (*owner*) located at _____ (*location*) to the following
extent: _____ (*job description*).

This release covers a progress payment for all labor, services, equipment, or materials
furnished to the property or to _____ (*person with whom signer*
contracted) as indicated in the attached statement(s) or progress payment request(s), except for unpaid
retention, pending modifications and changes, or other items furnished.

Before any recipient of this document relies on this document, the recipient should verify
evidence of payment to the signer.

The signer warrants that the signer has already paid or will use the funds received from this
progress payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen,
and suppliers for all work, materials, equipment, or services provided for or to the above
referenced project in regard to the attached statement(s) or progress payment request(s).

Date: _____

Company Name: _____

By: _____

Signature: _____

Title: _____

SUBSCRIBED AND SWORN TO BEFORE ME this the _____ day of _____,
20_____.

NOTARY PUBLIC, in and for the
State of Texas

My Commission Expires: _____

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NOTICE:

This document waives rights unconditionally and states that you have been paid for giving up those rights. It is prohibited for a person to require you to sign this document if you have not been paid the payment amount set forth below. If you have not been paid, use a conditional release form.

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT

Project _____

Job No. _____

The signer of this document has been paid and has received a progress payment in the sum of \$_____ for all labor, services, equipment, or materials furnished to the property or to _____ (person with whom signer contracted) on the property of _____ (owner) located at _____ (location) to the following extent: _____ (job description).

The signer therefore waives and releases any mechanic's lien right, any right arising from a payment bond that complies with a state or federal statute, any common law payment bond right, any claim for payment, and any rights under any similar ordinance, rule, or statute related to claim or payment rights for persons in the signer's position that the signer has on the above referenced project to the following extent: _____. This release covers a progress payment for all labor, services, equipment, or materials furnished to the property or to _____ (person with whom signer contracted) as indicated in the attached statement(s) or progress payment request(s), except for unpaid retention, pending modifications and changes, or other items furnished.

The signer warrants that the signer has already paid or will use the funds received from this progress payment to promptly pay in full all of the signer's laborers, subcontractors, materialmen, and suppliers for all work, materials, equipment, or services provided for or to the above referenced project in regard to the attached statement(s) or progress payment request(s).

Date: _____

Company Name: _____

By: _____

Signature: _____

Title: _____

SUBSCRIBED AND SWORN TO BEFORE ME this the ____ day of _____, 20____.

NOTARY PUBLIC, in and for the State of Texas

My Commission Expires: _____

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SECTION 013100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project.

1.2 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Electronic project management software.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.3 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
 - 1. Indicate relationship of components shown on separate Shop Drawings.
 - 2. Indicate required installation sequences.

1.4 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 days of the meeting.
- B. Pre-Construction Conference: The Architect will schedule a pre-construction conference before starting construction, at a time and location convenient to Owner, Contractor and Architect, but no later than 15 days after date of "Notice to Proceed".
1. Attendees: Authorized representatives of Owner, Architect, and their consultants, Contractor and its superintendent and, if requested, major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Permit Status
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing.
 - e. Designation of responsible personnel.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Status of utility provider site services
 - k. Preparation of Project Record Documents.
 - l. Use of electronic project management software.
 - m. Use of the premises.
 - n. Responsibility for temporary facilities and controls.
 - o. Parking availability.
 - p. Equipment deliveries and priorities.
 - q. First aid.
 - r. Security.
 - s. Progress cleaning.
 - t. Working hours.
- C. Pre-Installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related Change Orders.
 - d. Purchases.

PROJECT MANAGEMENT AND COORDINATION

- e. Deliveries.
 - f. Submittals.
 - g. Review of mock-ups.
 - h. Possible conflicts.
 - i. Compatibility problems.
 - j. Time schedules.
 - k. Weather limitations.
 - l. Manufacturer's written recommendations.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.
 - p. Temporary facilities and controls.
 - q. Space and access limitations.
 - r. Regulations of authorities having jurisdiction.
 - s. Testing and inspecting requirements.
 - t. Required performance results.
 - u. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements.
 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at regular intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: Representatives of Owner, Architect, and Contractor shall be represented at these meetings. The Contractor may be required to invite the subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities upon request. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 3. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 4. Review present and future needs of each entity present, including the following:
 - a. Permit status
 - b. RFI Status
 - c. Status of submittals.
 - d. Documentation of information for payment requests.
 - e. Status of Change Proposals
 - f. Status of Change Orders.
 - g. Quality and work standards.
 - h. Schedule Status Review
 - i. Open Issues Review
 - j. Interface requirements.
 - k. Sequence of operations.
 - l. Utilities Service provider deliver status
 - m. Deliveries.
 - n. Off-site fabrication.
 - o. Access.
 - p. Site utilization.
 - q. Temporary facilities and controls.

PROJECT MANAGEMENT AND COORDINATION

- r. Work hours.
 - s. Hazards and risks.
 - t. Progress cleaning.
5. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 6. Schedule Updating: Revise Contractor's Construction Interim Planning Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Coordination Meetings: Conduct Project coordination meetings on an as-needed basis. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
1. Attendees: Each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work
 2. Agenda: Review items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

1.5 ELECTRONIC PROJECT MANAGEMENT SOFTWARE

- A. General: So as to expedite electronic review process, process all documents through a web-based software service. Sending documents via email, FTP or paper will not be accepted.
1. Basis of Design (Product Standard):
 - a. Newforma, Inc.; Newforma Project Cloud, web-based software.
Website: www.NewformaProjectCloud.com
E-mail: projectcloud@newforma.com
Phone: (800) 303-4650
- B. Performance Requirements:
1. Project License:
 - a. Cloud based (no hardware required).
 - b. Unlimited user accounts.
 - c. Functionality to support subcontractors, contractors, architects and consultants.
 - d. Provide access to data for all project team members at no cost to the individual users.
 2. Training and Support:
 - a. Dedicated project training.
 - b. Phone support.
 3. Archive:
 - a. Export all data to an offline archive at the completion of the project.
 - b. Provide archive to architect, contractor and owner.
 - c. Archive shall include all attachments, meta data, review comments and time stamp history.

PROJECT MANAGEMENT AND COORDINATION

4. Submittals and RFIs:
 - a. Customizable logs and reporting accessible by all users.
 - b. Logs shall automatically update as submittals and RFIs are processed.
 - c. Automated routing of submittals and RFIs to design team based on trade.
 - d. Automated email notifications when submittal or RFI has been assigned or returned to a user.
 - e. Automated weekly email to design team users of overdue items.
 - f. Automatic sequential numbering per spec section for submittals.
 - g. Two sets of due dates - one overall due date and a consultant due date.
 - h. Built-in web-based markup tools to support a concurrent review of submittal and RFI.
5. Submittal Register:
 - a. Software vendor shall take specifications and build the required list of submittals and import into the software.
6. Drawing Management:
 - a. Provide current set of drawings and specifications through a centralized index.
 - b. Automated association of PDFs to the centralized index.
 - c. Manage drawing revisions with customizable review states.
 - d. Drawings shall be accessible offline via mobile devices.
7. File Sharing:
 - a. Integrated file sharing tool (FTP) to transfer any miscellaneous files such as BIM and CAD files.
 - b. Access permissions (view/edit) at a folder level.
8. Punch List and other Field Task Management:
 - a. Unlimited customizable field task types including punch list.
 - b. Locate and assign tasks from a mobile device.
 - c. No additional fees to individual users to access mobile apps.
 - d. Data shall be accessible offline on mobile devices.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013120

PROJECT COMMUNICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative procedures for preparation and submission of project communications documents.

1.2 DEFINITIONS

- A. Project communications documents shall be defined as the following:
 - 1. Letters.
 - 2. Memoranda.
 - 3. Fax Communications.
 - 4. E-Mail Communications / Internet Communications / Electronic Project Management Software Communications.
 - 5. RFI (Request for Information - Contractor).
 - 6. RFI-A (Request for Information - Architect).

1.3 FORMAT

- A. Letters, Memoranda, and Fax Communications: Submit in formats acceptable to the Architect.
- B. E-Mail Communications / Internet Communications / Electronic Project Management Software Communications: Submit in forms and formats acceptable to and as accepted by the Architect.
- C. RFI (Request for Information - Contractor): Submit on forms furnished by the Architect, or on other forms as accepted by the Architect.
- D. RFI-A (Request for Information - Architect), will be submitted by Architect to Contractor on Architect's standard form.

PART 2 - PRODUCTS

- A. Electronic Project Management Software: As required by Division 01 Section "Project Management and Coordination".

PART 3 - EXECUTION

3.1 PROJECT COMMUNICATIONS DOCUMENTS

- A. Letters, Memoranda, and Fax communications documents shall be submitted in a timely manner so as to facilitate project delivery and coordination. Routing of communications shall be as established in the Contract, the Contract Documents and the Preconstruction Conference. Communications documents shall be transmitted or forwarded in a manner consistent with the schedule and progress of the work.

PROJECT COMMUNICATIONS

- B. E-Mail Communications, Internet Communications, and Electronic Project Management Software programs must be compatible with the Architect's and Owner's computer systems and equipment. The responsibility for all costs for management of these systems, including, but not limited to, licensing, on site training or other training necessary for the proper operation of such systems, shall be by the Contractor. The Contractor shall keep written records and hard file copies of all electronic communications. Failure of the Contractor to keep such records shall waive the Contractor's right to rely on such communications and such communications shall be deemed to have not taken place.
1. Electronic File of Project Communication Documents: Provide Architect with an independent electronic archive of project communication documents using electronic project management software as defined in Division 01 Section "Project Management and Coordination".
- C. RFI (Request for Information - Contractor) shall be defined and limited to a request from the Contractor seeking interpretation or clarification of the requirements of the Contract Documents. Such requests shall comply with the following requirements:
1. RFI requests shall be submitted in a timely manner, well in advance of related work, and allow sufficient time for the resolution of issues relating to the request for interpretation or clarification. Contractor shall schedule the submission of RFI's so as to moderate and manage the flow of RFI requests. RFI's shall be submitted in a manner consistent with the schedule and progress of the work, and shall not be submitted in a sporadic and/or excessive manner.
 2. RFI requests shall be numbered in a sequential manner and contain a detailed description of the areas of work requiring interpretation or clarification. Include drawing and specification references, sketches, technical data, brochures, or other supporting data as deemed necessary by the Architect, for the Architect to provide the interpretations and clarifications requested. The Contractor shall include a "Proposed Solution" to the issue requiring interpretation or clarification.
 3. RFI's submitted to the Contractor by Sub-Contractors, vendors, suppliers, or other parties to the work shall be reviewed by the Contractor prior to submission to the Architect. If the Architect deems that such RFI requests have not been adequately reviewed by the Contractor, such requests will be returned to the Contractor for further action. Sub-Contractor's RFI shall contain a "Proposed Solution".
 4. RFI requests shall not contain submittals, substitutions requests, routine communications, correspondence, memos, claims, or any information required by other areas of the Contract Documents. RFI requests containing such information will be returned to the Contractor without action by the Architect.
 5. RFI requests are limited to a request for interpretation or clarification of the requirements of the Contract Documents. Interpretations provided by the Architect shall not change the requirements of the Contract or the Contract Documents. If the Contractor determines that the Architect's response to an RFI gives cause for a change in the Contract or the Contract Documents, the Contractor shall promptly, within 5 working days, give written notice to the Architect of request for adjustments. Requests for adjustments to the Contract shall be submitted in a manner consistent with the terms and conditions of the Contract Documents.
 6. If the Architect, after review, determines that any RFI has been submitted in an incomplete manner, is unnecessary, or does not otherwise comply with the requirements of this Section, the RFI will be returned without action to the Contractor. The Contractor shall delete the original submittal date from the RFI log and enter a new submittal date at the time of re-submittal.

PROJECT COMMUNICATIONS

- D. RFI-A (Request for Information - Architect) shall be defined as a request by the Architect for information relating to the obligations of the Contractor under the Contract.
1. After receipt of an RFI-A the Contractor shall provide a written response to the Architect within 5 working days. Responses shall be thorough, complete and shall contain all information requested by the Architect.
 2. An RFI-A shall be limited to a request by the Architect for information related to the project. The RFI-A shall not be construed as authorizing or directing a change in the Contract or the Contract Documents.

END OF SECTION

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SECTION 013200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities that must start and finish on the planned early start and finish times.
 - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. Major Area: A story of construction, a separate building, or a similar significant construction element.
- C. Milestone: A key or critical point in time for reference or measurement.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit one electronic copy. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Architect's final release or approval.
- B. Preliminary Construction Schedule: Submit one electronic copy.
- C. Contractor's Construction Schedule: Submit one electronic copy indicating Activity: ID, description, duration, successors, predecessors, total float, and critical path. The schedule will show the Work broken down into areas agreeable to the Owner. The schedule shall also include Owner supplied (only) and Owner supplied and installed for items integrated in the site or building.
- D. Daily Construction Reports: Submit electronic copies at weekly intervals.
- E. Material Location Reports: Submit electronic copies at monthly intervals.
- F. Field Condition Reports: Submit electronic copies at time of discovery of differing conditions.
- G. Special Reports: Submit electronic copies at time of unusual event.

1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. A list of all Project Submittals are to be input into the Project Management software system by the Contractor within 30 days of Notice to Proceed Preparation. Submit a schedule of submittals, with the ability to sort in order of any date field, as well as specification section. When assigning schedule dates include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 1. Coordinate Submittals Schedule with Contractor's Construction Schedule.
 - 2. Initial Submittal: Submit concurrently with preliminary construction schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Update Submittal: Submit concurrently with the update submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling".
- B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- C. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 - 4. Startup and Testing Time: Include not less than 7 days for startup and testing.

CONSTRUCTION PROGRESS DOCUMENTATION

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Owner-Furnished Products: Include a separate activity for each product.
 2. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Uninterruptible services.
 - c. Seasonal variations.
 - d. Environmental control.
 3. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Accepted Major Submittals.
 - b. Deliveries of Major Components.
 - c. Dry-in by area.
 - d. Fabrication of Major Components.
 - e. Installation.
 - f. Permanent power.
 - g. Startup and placement into final use and operation.
 4. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
 - a. Structural Framing Completion.
 - b. Permanent space enclosure (Dry-in).
 - c. Completion of mechanical installation; conditioned space for finishes
 - d. Completion of electrical installation; permanent power
 - e. Substantial Completion.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- F. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.
- G. Computer Software: Prepare schedules using Suretrak or approved equivalent.
- 2.3 PRELIMINARY CONSTRUCTION SCHEDULE
- A. Bar-Chart Schedule: Submit preliminary horizontal bar-chart-type construction schedule within 14 days of date established for the Notice to Proceed.
 - B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

CONSTRUCTION PROGRESS DOCUMENTATION

2.4 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of Project.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

2.5 REPORTS

- A. Daily Construction Reports: Daily reports shall be bundled weekly into Adobe PDF format and sent electronically to the Owner and Architect. Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. Approximate count of personnel at Project site.
 - 3. High and low temperatures and general weather conditions.
 - 4. Accidents.
 - 5. Meetings and significant decisions.
 - 6. Progress of work.
 - 7. Unusual events (refer to special reports).
 - 8. Stoppages, delays, shortages, and losses.
 - 9. Meter readings and similar recordings.
 - 10. Emergency procedures.
 - 11. Orders and requests of authorities having jurisdiction.
 - 12. Construction Change Directives received.
 - 13. Major services connected and disconnected.
 - 14. Deliveries of Major Components.
 - 15. Major equipment or system tests and startups.
 - 16. Partial Completions and occupancies.
 - 17. Substantial Completions authorized.

2.6 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

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SECTION 013233

PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Photography.
 - 2. Views and Techniques
 - 3. Images
 - 4. Media

1.2 PHOTOGRAPHY

- A. Take construction record photographs periodically during course of Work that are acceptable to the Owner.
- B. Furnish construction photographs taken on commencement of Work and at monthly intervals.
- C. Submit digital media monthly with each pay application.
- D. Photos may be incorporated into monthly construction report which should include schedule, progress of work, etc.
- E. Do not display photographs in publications, contests or other public or private forum without written consent of Owner and Architect.

1.3 QUALITY ASSURANCE

- A. Qualifications - Photographer: The Contractor shall utilize qualified personnel to take high quality digital photos. If photos are deemed unacceptable, the Owner may require the Contractor to hire an independent professional photographer.

1.4 INFORMATIONAL SUBMITTALS

- A. Submit information on who will be securing digital and aerial photographs within 10 days of the Notice to Proceed.

PART 2 - PRODUCTS

2.1 DIGITAL MEDIA

- A. Digital/media images will become property of Owner and provided via electronic transfer.
- B. Catalog and index digital images in chronological sequence. Provide typed table of contents. Place negatives in archive negative sheets and compiled in three-ring commercial quality binder.

PART 3 - EXECUTION

3.1 VIEWS REQUIRED

- A. Consult with Architect for instructions concerning views required at each specified visit to site.
 - B. Photograph from locations to adequately illustrate condition of construction and state of progress.
 - C. Minimum views and quantities required:
 - 1. At each specified time, take photographs from 12 different views that are consistent from month to month.
 - 2. Views shall be from consistent vantage points where practical.
 - 3. Aerial photographs from 2 different views.
 - D. Architect will have right to request fewer photographs be taken at certain intervals so that more photographs may be taken at other times, providing that total number of photographs remains unchanged.
- 3.2 DELIVERY OF DIGITAL IMAGES
- A. Deliver digital images prints with each monthly pay application.

END OF SECTION

SECTION 013300

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, Certifications, and other miscellaneous submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.
- C. Field samples: Full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- D. Mock-ups: Full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.3 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals. Contractor must agree in writing to Architect's Download Agreement before obtaining CAD Drawings.
- 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. 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.
 - 3. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 4. Utilize electronic project management software program to process submittals when feasible with the type and extent of submittals. Refer to Division 01 Section "Project Management and Coordination" for description of electronic project management software.
- C. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.
 - 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

SUBMITTAL PROCEDURES

2. Concurrent Review: Where concurrent review of submittals by Architect's consultants, Owner, or other parties is required, allow 21 days for initial review of each submittal.
 3. If intermediate submittal is necessary, process it in same manner as initial submittal.
 4. Allow 15 days for processing each resubmittal.
 5. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Unique identifier, including revision number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
1. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.

SUBMITTAL PROCEDURES

3. Transmittal Form: Provide Contractor's standard form with locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Submittal and transmittal distribution record.
 - i. Remarks.
 - j. Signature of transmitter.
- 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: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. When submittals cannot be digitally submitted, submit minimum of one reproducible and two prints of Shop Drawings until final acceptance. Submit one additional print of Structural, Mechanical and Electrical items. Reproducible and one print will be returned to the General Contractor after Architect's review.
- C. When submittals cannot be digitally submitted, submit minimum of four copies of Product Data until final acceptance. Submit one additional copy of Structural, Mechanical and Electrical items. Three copies of the Product Data will be returned to the General Contractor after Architect's review.
- D. Submit minimum of duplicates of Samples. Additional samples may be required for specific items for coordination of finishes.
- E. Submit additional copies of Samples and Product Data as necessary for distribution to subcontractors. Contractor shall obtain and distribute required prints of Shop Drawings made from reviewed and stamped reproducible. Number of copies of Product Data, Samples and Shop Drawings to be submitted shall be established in the pre-construction conference.
- F. Contractor shall review and stamp with his approval submittals. Submittals which do not bear Contractor's approval stamp shall be returned without review. Stamp shall include statement, "This submittal has been reviewed for compliance with requirements of the work and of the Contract Documents".
- G. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 1. If information must be specially prepared for submittal because standard printed 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 written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operating and maintenance manuals.
 - k. Compliance with recognized trade association standards.
 - l. Compliance with recognized testing agency standards.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - o. Certification that products are appropriate for installation indicated.
- H. 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: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - 2. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 - 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
- I. Coordination Drawings: Comply with requirements in Division 01 Section "Project Management and Coordination".
- J. Samples: Prepare physical units of materials or products, including the following:
- 1. 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.
 - 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected.
 - 3. Samples include, but are not limited to, the following:
 - a. Partial sections of manufactured or fabricated components.
 - b. Small cuts or containers of materials.
 - c. Complete units of repetitively used materials.
 - d. Swatches showing color, texture, and pattern; color range sets.
 - e. Components used for independent testing and inspection.

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4. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
 6. Number of Samples for Initial Selection: Submit three full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return two submittals with options selected.
 7. 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.
- K. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 DELEGATED DESIGN SUBMITTALS

- 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 insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and one paper copy 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.

2.3 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies when digital uploads are not possible: Submit one copy of each submittal, unless otherwise indicated. Architect will not return copies.
 - 2. Certificates and Certifications: Provide a notarized 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.
 - 3. Test and Inspection Reports: Comply with requirements in Division 01 Section "Quality Control".
- B. Contractor's Construction Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation".
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by

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manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

- N. **Research/Evaluation Reports:** Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
 2. Date of evaluation.
 3. Time period when report is in effect.
 4. Product and manufacturers' names.
 5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- O. **Maintenance Data:** Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 01 Section "Closeout Procedures".
- P. **Design Data:** Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- R. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- S. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

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- T. Industry Standards: Where other Sections of the Specifications require that a product, material, or installation complies with specified industry standard, submit copies of standards at same time as submittal of other specified submittals.
1. Submit copies of reference standards specified such as ASTM, UL, FM, ANSI, ETC., for each material or installation of material specified.
 2. Submit copies of trade association standards specified such as NRCA, BIA, AWI, SMACNA, ETC., for each material, process fabrication, or installation specified.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- 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 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Except for submittals for the record, for information and similar purposes, where action and return on submittals is required or requested, the Architect will review each submittal, mark to indicate the action taken, and return.
- C. Compliance with specified characteristics is the Contractor's responsibility, and not considered part of the Architect's review and indication of action taken.
- D. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:
1. Final-But-Restricted Release: When submittals are marked "Accepted as Noted," the Work covered by the submittal may proceed provided it complies with both the Architect's notations and corrections on the submittal and requirements of the Contract Documents. Final acceptance will depend on that compliance.
 2. Returned for Resubmittal: When submittal is marked "Not Accepted" or "Revise Resubmit," do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the Architect's notations. Resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Not Accepted or Revise Resubmit" to be used at the Project site, or elsewhere where construction is in progress.
 3. Other Action: Where a submittal is primarily for information or record purposes, or for special processing or other Contractor activity, the submittal will be returned, marked "Not Reviewed" or "Not Reviewed; submittal not required by Contract Documents".
- E. Architect's acceptance of Shop Drawings, Samples or Product Data which deviates from the Contract Documents does not authorize changes to the Contract Sum. Submit in writing at the

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time of submission any changes to the Contract Sum affected by such Shop Drawings, Samples or Product Data, otherwise, claim for extras will not be considered.

- F. Submittals not required by the Contract Documents will not be reviewed and may be discarded.
- G. Electronic File of Submittal Documents: Provide Architect with an independent electronic archive of project submittal documents using electronic project management software as defined in Division 01 Section "Project Management and Coordination".

END OF SECTION

SECTION 014000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. 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.

1.2 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 constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Mockups establish the standard by which the Work will be judged.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL (Nationally Recognized Testing Laboratories), an NVLAP (National Voluntary Laboratory Accreditation Program), or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

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- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. 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. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction and with the qualification requirements of individual specification section governing their work.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: 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 conflicting requirements 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.

1.4 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
 - 1. Project quality-control manager may be the Project superintendent or be an individual with no other Project responsibilities, as accepted by the Architect.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
 - 1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
 - 2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."

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3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority when Commissioning is included in the Project.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results, including Owner acceptance of nonconforming work. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. 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.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
 1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Statement whether conditions, products, and installation exceed manufacturer's statements.
 8. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

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1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

- 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. 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.
- C. 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.
- D. 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.
- 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 is similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections 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. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- 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 329; 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. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

QUALITY REQUIREMENTS

- I. 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.

- J. 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.

- K. Mock-ups: Prior to fabrication and installation, build mock-up for each form of construction and finish required to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution. Build mock-up to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mock-up in the location and of the size indicated or, if not indicated, as directed by Architect. Contractor shall provide structural support framework.
 - a. Show typical components, attachments to building structure, and requirements of installation.

 - 2. Clean exposed faces of mock-up.
 - 3. Notify Architect seven days in advance of the dates and times when mock-up will be installed.
 - 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 5. Protect accepted mock-up from the elements with weather-resistant membrane.
 - 6. Obtain Architect's acceptance of mock-ups before starting fabrication.
 - 7. Maintain mock-ups during construction in an undisturbed condition as a standard for review of the completed Work.
 - 8. Acceptance of mock-ups does not constitute acceptance of deviations from the Contract Documents contained in mock-ups unless such deviations are specifically noted by Contractor, submitted to Architect in writing, and accepted by Architect in writing.
 - 9. Demolish and remove mock-ups when directed by Architect unless accepted to become part of the completed Work.

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.

QUALITY REQUIREMENTS

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. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. 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.
 2. 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.
 3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspecting will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. 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 01 Section "Submittal Procedures."
- D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. Retesting/Reinspecting: 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.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 4. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify

QUALITY REQUIREMENTS

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.
- H. 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.
- I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule.
1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.
 - a. Prepare in tabular form and include the following:
 - 1) Specification Section number and title.
 - 2) Entity responsible for performing tests and inspections.
 - 3) Description of test and inspection.
 - 4) Identification of applicable standards.
 - 5) Identification of test and inspection methods.
 - 6) Number of tests and inspections required.
 - 7) Time schedule or time span for tests and inspections.
 - 8) Requirements for obtaining samples.
 - 9) Unique characteristics of each quality-control service.

1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner may engage a qualified to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 5. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: 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 Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 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 or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."
- 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

SECTION 014100
REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: General regulatory requirements.

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM E 119: Test Methods for Fire Tests of Building Construction and Materials
- B. Underwriters Laboratories Inc.
 - 1. UL 263: Fire Tests of Building Construction and Materials.

1.3 GENERAL REQUIREMENTS

- A. General: Additional information with legal implications regarding applicable governing laws and jurisdictions can be found in Conditions of Contract.
- B. Codes:
 - 1. Where references are made on Drawings or Specifications to codes, they shall be considered an integral part of the Contract Documents as minimum standards. Nothing contained in Contract Documents shall be so construed as to be in conflict with law, bylaw or regulation of municipal, State, Federal or other authorities having jurisdiction.
 - 2. Perform Work in compliance with Codes on Construction Drawings.
 - a. NFPA 70 National Electrical Code, edition required by authorities having jurisdiction.
 - b. National, state and local barrier free codes, laws and ordinances.
 - c. ANSI/ASME A17.1 - Elevator Code, edition required by authorities having jurisdiction.
 - d. NFPA applicable NFPA Standards.
- C. Contractor shall, without additional expense to Owner, obtain necessary licenses and permits, and be responsible for complying with Federal, state, county, and municipal laws, codes, and regulations applicable to performance of Work, including, but not limited to, laws or regulations requiring use of licensed contractors to perform parts of Work.
- D. Environmental Requirements: Contractor shall comply with applicable local, state, and federal air and water quality standards with pollution control laws; and with such rules, regulations and directives as may be lawfully issued for the protection of the environment in the areas surrounding the confines of this contract.
 - 1. Obtain certificates of registration, issued by The Texas Water Commission, for work involving the installation removal, or repair of underground storage tank systems, including piping.
- E. Occupancy Permit: The General Contractor shall be responsible for securing a Certificate of Occupancy permit at completion of project and shall deliver such permit to Owner. Final Payment shall be retained until the permit has been received by Owner.

1.4 FIRE-RESISTANCE REQUIREMENTS

- A. Fire Resistance Ratings and Fire Tests: Fire-resistance ratings of building elements, components, and assemblies shall be determined only in accordance with the test

procedures set forth in ASTM E 119 or UL 263, or by alternative methods approved by applicable authorities having jurisdiction.

1. Fire-resistance ratings shall be determined or listed based on fire tests performed by one of the following testing agencies, or other agencies acceptable to governing authorities having jurisdiction.
 - a. Factory Mutual Laboratories.
 - b. Intertek
 - c. Southwest Research Institute.
 - d. Underwriters Laboratories, Inc.
 2. Where reference is made to only one testing authority, equivalent fire ratings as determined or listed by another testing agency are acceptable if approved by applicable authorities having jurisdiction.
- B. Marking and Identification: Fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions, or any other walls required to have protected openings or penetrations, shall be permanently identified with signage or stenciling. Such identification shall:
1. Be located in accessible floor plenums, ceiling plenums, or attic spaces.
 2. Be repeated at intervals not exceeding 30 feet o.c., measured horizontally along the partition or wall.
 3. Include lettering not less than 0.5- inch in height, worded as follows: "FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS AND PENETRATIONS."

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 014200

REFERENCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes reference standards, definitions and specification format and content.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term "indicated" refers to requirements expressed by graphic representations, or in written form on Drawings, in Specifications, and in other Contract Documents. Terms such as "shown", "noted", "scheduled", and "specified" are used to help the user locate the reference.
- C. Directed: The term "directed" is a command or instruction by Architect. Other terms including "requested," "authorized," "selected," "approved," and "permitted" have the same meaning as "directed."
- D. Approved: The term "approved", when used to convey Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulations: The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term "furnish" means supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. Install: The term "install" describes operations at Project site including unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. Provide: The term "provide" means to furnish and install, complete and ready for the intended use.
- I. Submitted: The terms "submitted", "reported", "satisfactory" and similar words and phrases means submitted to Architect, reported to Architect and similar phrases.
- J. Installer: An "Installer" is the Contractor or another entity engaged by the Contractor, as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
- K. Experienced: The term "experienced", when used with an entity, means having successfully completed a minimum of ten previous projects similar in size and scope to this Project; being familiar with the special requirements indicated, and having complied with requirements of authority having jurisdiction. Trades: Using terms 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 tradespersons of the corresponding generic name.
- L. Project Site: The term "Project site" means the space available for performing construction activities. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

- M. Testing Agencies: A “testing agency” is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the 16-Division format and CSI/CSC’s “MasterFormat 1995” numbering system.
 - 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.
- B. Specification Content: This Specification uses certain conventions regarding 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. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
 - 3. 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.

1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents, unless otherwise indicated.
- C. Conflicting Requirements: Where 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.
- D. 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 the requirements. Refer uncertainties to the Architect for a decision before proceeding.

REFERENCES

- E. Copies of Standards: Each entity engaged in construction on the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where other Sections of the Specifications require that a product, material, or installation complies with specified industry standard, the Contractor shall obtain copies directly from the publication source and submit copies of standards at same time as submittal of other specified submittals.
- F. Industry Organization Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications and other Contract Documents they shall mean the name of a trade association, standards-developing organization or other entity in the context of referencing a standard or publication. The following abbreviations and acronyms, as referenced in the Contract Documents, mean the associated names.
1. Names and Web site addresses are subject to change and are believed, but not assured, to be accurate and up to date as of the date of Contract Documents.
 2. Refer to Gale Research's "Encyclopedia of Associations," or Columbia Book's "National Trade and Professional Association of the U.S.".

AA	Aluminum Association, Inc. (The)	www.aluminum.org
AAADM	American Association of Automatic Door Manufacturers	www.taol.com/aaadm
AABC	Associated Air Balance Council	www.aabchq.com
AAMA	American Architectural Manufacturers Association	www.aamanet.org
AAN	American Association of Nurserymen	(See ANLA)
AASHTO	American Association of State Highway and Transportation Officials	www.aashto.org
AATCC	American Association of Textile Chemists and Colorists	www.aatcc.org
ABMA	American Bearing Manufacturers Association	www.abma-dc.org
ACI	American Concrete Institute/ACI International	www.aci-int.org
ACPA	American Concrete Pipe Association	www.concrete-pipe.org
ADC	Air Diffusion Council	
AEIC	Association of Edison Illuminating Companies, Inc. (The)	www.aeic.org
AFPA	American Forest & Paper Association	(See AF&PA)
AF&PA	American Forest & Paper Association	www.afandpa.org
AGA	American Gas Association	www.aga.org
AGC	Associated General Contractors of America (The)	www.agc.org
AHA	American Hardboard Association	www.aharbd.org
AHAM	Association of Home Appliance Manufacturers	www.aham.org
AI	Asphalt Institute	www.asphaltinstitute.org
AIA	American Institute of Architects (The)	www.aiaonline.org
AISC	American Institute of Steel Construction, Inc.	www.aisc.org
AISI	American Iron and Steel Institute	www.steel.org
AITC	American Institute of Timber Construction	
ALA	American Laminators Association	(See LMA)
ALCA	Associated Landscape Contractors of America	www.alca.org
ALSC	American Lumber Standard Committee	
AMCA	Air Movement and Control Association International, Inc.	www.amca.org
ANLA	American Nursery & Landscape Association (Formerly: AAN - American Association of Nurserymen)	www.anla.org
ANSI	American National Standards Institute	www.ansi.org
AOSA	Association of Official Seed Analysts	www.zianet.com/AOSA
APA	APA-The Engineered Wood Association	www.apawood.org
APA	Architectural Precast Association	www.archprecast.org
API	American Petroleum Institute	www.api.org
ARI	Air-Conditioning & Refrigeration Institute	www.ari.org
ASCA	Architectural Spray Coaters Association	www.ascassoc.com
ASCE	American Society of Civil Engineers	www.asce.org

REFERENCES

ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers	www.ashrae.org
ASME	ASME International (American Society of Mechanical Engineers International)	www.asme.org
ASSE	American Society of Sanitary Engineering	www.asse-plumbing.org
ASTM	American Society for Testing and Materials	www.astm.org
AWCI	AWCI International (Association of Wall and Ceiling Industries International)	www.awci.org
AWCMA	American Window Covering Manufacturers Association	(See WCMA)
AWI	Architectural Woodwork Institute	www.awinet.org
AWPA	American Wood-Preservers' Association	www.awpa.com
AWS	American Welding Society	www.aws.org
AWWA	American Water Works Association	www.awwa.org
BHMA	Builders Hardware Manufacturers Association	www.buildershardware.com
BIA	Brick Industry Association (The)	www.bia.org
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)	www.bifma.com
CCC	Carpet Cushion Council	www.carpetcushion.org
CCFSS	Center for Cold-Formed Steel Structures	www.umn.edu/~ccfss
CDA	Copper Development Association Inc.	www.copper.org
CEA	Canadian Electricity Association (The)	www.canelect.ca
CFFA	Chemical Fabrics & Film Association, Inc.	www.taol.com/cffa
CGA	Compressed Gas Association	www.cganet.com
CGSB	Canadian General Standards Board	www.pwgsc.gc.ca/cgsb
CIMA	Cellulose Insulation Manufacturers Association	www.cellulose.org
CISCA	Ceilings & Interior Systems Construction Association	www.cisca.org
CISPI	Cast Iron Soil Pipe Institute	www.cispi.org
CLFMI	Chain Link Fence Manufacturers Institute	www.chainlinkinfo.com (under construction)
CPA	Composite Panel Association (Formerly: National Particleboard Association)	www.pbmdf.com
CPPA	Corrugated Polyethylene Pipe Association Division of Plastics Pipe Institute	www.cppa-info.org
CRI	Carpet and Rug Institute (The)	www.carpet-rug.com
CRSI	Concrete Reinforcing Steel Institute	www.crsi.org
CSA	CSA International (Formerly: IAS - International Approval Services) Division of Canadian Standards Association	www.iasapprovals.org
CSI	Construction Specifications Institute (The)	www.csinet.org
CSSB	Cedar Shake & Shingle Bureau	www.cedarbureau.org
CTI	Cooling Tower Institute	www.cti.org
DHI	Door and Hardware Institute	www.dhi.org
EIA/TIA	Electronic Industries Alliance/Telecommunications Industry Association	www.eia.org
EIMA	EIFS Industry Members Association	www.eifsfacts.com
EJMA	Expansion Joint Manufacturers Association, Inc.	www.ejma.org
FCI	Fluid Controls Institute	www.fluidcontrolsinstitute.org
FGMA	Flat Glass Marketing Association	(See GANA)
FM	Factory Mutual System	(See FMG)
FMG	FM Global (Formerly: FM - Factory Mutual System)	www.fmglobal.com
GA	Gypsum Association	www.gypsum.org
GANNA	Glass Association of North America (Formerly: FGMA - Flat Glass Marketing Association)	www.glasswebsite.com/ganna
GRI	Geosynthetic Research Institute	www.drexel.edu/gri

REFERENCES

GTA	Glass Tempering Division of Glass Association of North America	(See GANA)
HI	Hydraulic Institute	
HI	Hydronics Institute	www.gamanet.org
	Division of Gas Appliance Manufacturers Association	
HMMA	Hollow Metal Manufacturers Association	(See NAAMM)
	Division of National Association of Architectural Metal Manufacturers	
HPVA	Hardwood Plywood & Veneer Association	www.hpva.org
HPW	H. P. White Laboratory, Inc.	
IAS	International Approval Services (See CSA International)	
ICEA	Insulated Cable Engineers Association, Inc.	www.icea.net
ICRI	International Concrete Repair Institute	www.icri.org
IEC	International Electrotechnical Commission	www.iec.ch
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)	www.ieee.org
IESNA	Illuminating Engineering Society of North America (The)	www.iesna.org
IGCC	Insulating Glass Certification Council	www.igcc.org
ILI	Indiana Limestone Institute of America, Inc.	www.iliai.com
IRI	HSB Industrial Risk Insurers	www.industrialrisk.com
ITS	Intertek Testing Services	www.itsglobal.com
IWS	Insect Screening Weavers Association (Now defunct)	
KCMA	Kitchen Cabinet Manufacturers Association	www.kcma.org
LGSI	Light Gage Structural Institute	www.loseke.com
LMA	Laminating Materials Association (Formerly: ALA - American Laminators Association)	www.lma.org
LPI	Lightning Protection Institute	www.lightning.org
LSGA	Laminated Safety Glass Association	(See GANA)
MBMA	Metal Building Manufacturers Association	www.mbma.com
MFMA	Maple Flooring Manufacturers Association	www.maplefloor.org
MFMA	Metal Framing Manufacturers Association	
MGPHO	Medical Gas Professional Healthcare Organization, Inc.	www.mgpho.org
MHIA	Material Handling Industry of America	www.mhia.org
MIA	Marble Institute of America	www.marble-institute.com
ML/SFA	Metal Lath/Steel Framing Association (See SSMA)	
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry, Inc.	www.mss-hq.com
NAAMM	National Association of Architectural Metal Manufacturers	www.naamm.org
NAAMM	North American Association of Mirror Manufacturers	(See GANA)
NACE	NACE International (National Association of Corrosion Engineers International)	www.nace.org
NAIMA	North American Insulation Manufacturers Association	www.naima.org
NAMI	National Accreditation and Management Institute, Inc.	
NAPM	National Association of Photographic Manufacturers	(See PIMA)
NBGQA	National Building Granite Quarries Association, Inc.	www.nbgqa.com
NCMA	National Concrete Masonry Association	www.ncma.org
NCPI	National Clay Pipe Institute	www.ncpi.org
NCTA	National Cable Television Association	www.ncta.com
NEBB	National Environmental Balancing Bureau	www.nebb.org
NECA	National Electrical Contractors Association	www.necanet.org
NeLMA	Northeastern Lumber Manufacturers' Association	www.nelma.org
NEMA	National Electrical Manufacturers Association	www.nema.org
NETA	InterNational Electrical Testing Association	www.electricnet.com/net
		a
NFPA	National Fire Protection Association	www.nfpa.org

REFERENCES

NFRC	National Fenestration Rating Council	www.nfrc.org
NGA	National Glass Association	www.glass.org
NHLA	National Hardwood Lumber Association	www.natllhardwood.org
NLGA	National Lumber Grades Authority	www.nlga.org
NOFMA	National Oak Flooring Manufacturers Association	www.nofma.org
NPA	National Particleboard Association	(See CPA)
NRCA	National Roofing Contractors Association	www.nrca.net
NRMCA	National Ready Mixed Concrete Association	www.nrmca.org
NSA	National Stone Association	www.agggregates.org
NSF	NSF International (National Sanitation Foundation International)	www.nsf.org
NTMA	National Terrazzo & Mosaic Association (The)	www.ntma.com
NWWDA	National Wood Window and Door Association	(See WDMA)
PCI	Precast/Prestressed Concrete Institute	www.pci.org
PDCA	Painting and Decorating Contractors of America	www.pdca.com
PDI	Plumbing & Drainage Institute	www.pdionline.org
PGI	PVC Geomembrane Institute/Technology Program University of Illinois-Urbana Champaign	//pgi-tp.ce.uiuc.edu
PIMA	Photographic & Imaging Manufacturers Association (Formerly: NAPM - National Association of Photographic Manufacturers)	www.pima.net
RCSC	Research Council on Structural Connections (c/o AISC)	www.boltcouncil.org
RFCI	Resilient Floor Covering Institute	(Contact by mail only)
RIS	Redwood Inspection Service Division of the California Redwood Association	www.calredwood.org
RMA	Rubber Manufacturers Association	www.rma.org
SAE	SAE International	www.sae.org
SDI	Steel Deck Institute	www.sdi.org
SDI	Steel Door Institute	www.steeldoor.org
SEFA	Scientific Equipment and Furniture Association	www.sefalabfurn.com
SGCC	Safety Glazing Certification Council	www.sgcc.org
SIGMA	Sealed Insulating Glass Manufacturers Association	www.sigmaonline.org/sigma
SJI	Steel Joist Institute	www.steeljoist.org
SMA	Screen Manufacturers Association	
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association	www.smacna.org
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)	www.sprayfoam.org
SPI	The Society of the Plastics Industry, Inc.	www.plasticsindustry.org
SPIB	Southern Pine Inspection Bureau (The)	www.spib.org
SPI/SPFD	The Society of the Plastics Industry, Inc. Spray Polyurethane Foam Division	(See SPI)
SPRI	SPRI (Single Ply Roofing Institute)	www.spri.org
SSINA	Specialty Steel Industry of North America	www.ssina.com
SSMA	Steel Stud Manufacturers Association (Formerly: ML/SFA - Metal Lath/Steel Framing Association)	www.ssma.com
SSPC	SSPC: The Society for Protective Coatings	www.sspc.org
STI	Steel Tank Institute	www.steeltank.com
SWI	Steel Window Institute	www.steelwindows.com
SWRI	Sealant, Waterproofing & Restoration Institute	www.swrionline.org
TCA	Tile Council of America, Inc.	www.tileusa.com
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance	www.tiaonline.org

REFERENCES

TPI	Truss Plate Institute	
TPI	Turfgrass Producers International	www.turfgrassod.org
UFAC	Upholstered Furniture Action Council	www.ufac.org
UL	Underwriters Laboratories Inc.	www.ul.com
UNI	Uni-Bell PVC Pipe Association	//members.aol.com/unibel
USITT	United States Institute for Theatre Technology, Inc.	www.culturenet.ca/usitt
USP	U.S. Pharmacopeia	www.usp.org
WASTEC	Waste Equipment Technology Association	www.wastec.org
WCLIB	West Coast Lumber Inspection Bureau	www.wclib.org
WCMA	Window Covering Manufacturers Association (Formerly: AWCMA-American Window Covering Manufacturers Association)	www.windowcoverings.org
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA-National Wood Window and Door Association)	www.wdma.com
WIC	Woodwork Institute of California	www.wicnet.org
WMMPA	Wood Moulding & Millwork Producers Association	www.wmmpa.com
WWPA	Western Wood Products Association	www.wwpa.org

G. Code Agency Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the following entities. Names and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc.	www.bocai.org
CABO	Council of American Building Officials	(See ICC)
IAPMO	International Association of Plumbing and Mechanical Officials	www.iapmo.org
ICBO	International Conference of Building Officials	www.icbo.org
ICC	International Code Council (Formerly: CABO - Council of American Building Officials)	www.intlcode.org
SBCCI	Southern Building Code Congress International, Inc.	www.sbcci.org

H. Federal Government Agency Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the following entities. Names and Web site addresses are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADA	Americans with Disabilities Act.	(See ADAAG)
ADAAG	Americans with Disabilities ACT (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board	www.access.board.gov
CE	Army Corps of Engineers	CRD Standards
CFR	Code of Federal Regulations	www.access.gpo.gov/nara/cfr
CPSC	Consumer Product Safety Commission	www.cpsc.gov
CRD	Handbook for Concrete and Cement Available from Army Corps of Engineers Waterways Experiment Station	www.wes.army.mil
DOC	Department of Commerce	www.doc.gov
DOD	Department of Defense	//astimage.daps.dla.mil/online
	DOD Specifications and Standards	
EPA	Environmental Protection Agency	www.epa.gov
FAA	Federal Aviation Administration	www.faa.gov
	Department of Transportation	
FCC	Federal Communications Commission	www.fcc.gov
FDA	Food and Drug Administration	www.fda.gov

REFERENCES

FED-STD	Federal Standard	(See FS)
FS	Federal Specification (Available from DOD, GSA, and NIBS)	
FTMS	Federal Test Method Standard	(See FS)
GSA	General Services Administration	www.gsa.gov
HUD	Department of Housing and Urban Development	www.hud.gov
LBL	Lawrence Berkeley Laboratory	(See LBNL)
LBNL	Lawrence Berkeley National Laboratory	www.lbl.gov
MILSPEC	Military Specification and Standards	(See DOD)
NCHRP	National Cooperative Highway Research Program	(See TRB)
NIST	National Institute of Standards and Technology	www.nist.gov
OSHA	Occupational Safety & Health Administration (See CFR 29)	www.osha.gov
RUS	Rural Utilities Service	(See USDA)
TRB	Transportation Research Board	www.nas.edu/trb
UFAS	Uniform Federal Accessibility Standards Available from Access Board	www.access-board.gov
USDA	Department of Agriculture	www.usda.gov
USPS	Postal Service	www.usps.gov

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 015000

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including but not limited to, the following:
 - 1. Waste disposal facilities.
 - 2. Field offices.
 - 3. Storage and fabrication sheds.
 - 4. Construction aids and miscellaneous services and facilities.
 - 5. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
- B. Temporary utilities are specified in Division 01 Section "Temporary Utilities".
- C. Security and protection facilities are specified in Division 01 Section "Temporary Barriers and Enclosures".

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Testing agencies.
 - 2. Personnel of authorities having jurisdiction.

1.4 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to, the following:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.
 - 6. City ordinances and regulations.

1.5 PROJECT CONDITIONS

- A. Temporary Facilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary facilities to use of permanent facilities.
 - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
 - 1. Keep temporary services and facilities clean and neat.
 - 2. Relocate temporary services and facilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials and equipment may be new or used but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.2 EQUIPMENT

- A. General: Provide equipment suitable for use intended.
- B. Field Offices: Prefabricated with lockable entrances, operable windows, and serviceable finishes; heated and air conditioned; on foundations adequate for normal loading.
- C. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- D. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY FACILITIES INSTALLATION

- A. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 - 2. Temporary Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.
 - 3. Drinking-Water Facilities: Provide bottled-water, drinking-water units. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.

- B. Support Facilities: Comply with the following:
 - 1. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access.
 - 2. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
 - 3. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste.
 - 1. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material to be deposited.
 - 2. Develop a waste management plan for Work performed on Project. Indicate types of waste materials Project will produce and estimate quantities of each type. Provide detailed information for on-site waste storage and separation of recyclable materials. Provide information on destination of each type of waste material and means to be used to dispose of all waste materials.

- D. Common-Use Field Office: Provide an insulated, weathertight, air-conditioned field office for use as a common facility by all personnel engaged in construction activities; of sufficient size to accommodate required office personnel and meetings at Project site. Keep office clean and orderly. Provide a clean working toilet.

- E. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility services. Sheds may be open shelters or fully enclosed spaces within building or elsewhere on-site.

3.3 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

TEMPORARY FACILITIES AND CONTROLS

- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Closeout Procedures".

END OF SECTION

SECTION 015100
TEMPORARY UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary utilities, including but not limited to, the following:
1. Water service and distribution.
 2. Heating and cooling facilities.
 3. Ventilation.
 4. Electric power service.
 5. Lighting.
 6. Telephone service.
 7. Fire Protection.

1.2 USE CHARGES

- A. General: Cost or use charges for temporary utilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary utilities without cost, including, but not limited to, the following:
1. Testing agencies.
 2. Personnel of authorities having jurisdiction.
- B. **Water Service:** Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site. For phased Projects adjacent to existing facilities, the Contractor shall secure temporary water sources (e.g. existing hydrants) using temporary meters except when necessary for connecting to permanent building fixtures or permanent irrigation systems, in which case such existing metered water usage will be paid for by the Owner.
- C. **Electric Power Service:** Temporary power will be required to be obtained by the contractor through the local utility. Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site. For phased Projects (existing facility expansions) requiring permanent power from existing and adjacent facilities that are already metered, the Owner will pay for such power usage.

1.3 SUBMITTALS

- A. Temporary Utility Reports: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of date established for submittal of Contractor's Construction Schedule, submit a schedule indicating implementation and termination of each temporary utility.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and **NFPA 241**.
1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.

TEMPORARY UTILITIES

2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with **NFPA 70**.
 - B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
 - C. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to, the following:
 1. Building Code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, Fire Department and Rescue Squad rules.
 5. Environmental protection regulations.
 6. City ordinances and regulations.
- 1.5 PROJECT CONDITIONS
- A. Permanent Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary facilities to use of permanent facilities.
 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.
 - B. Conditions of Use: The following conditions apply to use of temporary utilities by all parties engaged in the Work:
 1. Operate in a safe and efficient manner.
 2. Take necessary fire prevention measures.
 3. Do not overload system, or permit them to interfere with progress.
 4. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.
 5. Relocate temporary utilities as required by progress of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. Materials and equipment may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- B. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures.
 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.
- C. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.

TEMPORARY UTILITIES

2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
- D. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- E. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate temporary utilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify utilities as required.
- B. Provide each utility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until utilities are no longer needed or are replaced by authorized use of completed permanent utilities.
- C. Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.
 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.
- D. **Existing Water Service:** Use of Owner's existing water service facilities will be permitted with prior approval, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
 1. Provide rubber hoses as necessary to serve Project site.
 2. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

TEMPORARY UTILITIES

- G. Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnecting means, automatic ground-fault interrupters, and main distribution switchgear.
1. Install electric power service underground, unless overhead service must be used.
 2. Install power distribution wiring overhead and rise vertically where least exposed to damage.
 3. Connect temporary service to power source, as directed by electric company officials.
- H. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.
1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 2. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.
 3. Provide metal conduit enclosures or boxes for wiring devices.
- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.
- J. Telephone Service: Provide cellular telephone service throughout construction period for all personnel engaged in construction activities.
1. Provide dedicated cellular telephone services all field office personnel.
 2. Provide a voice-mail service on all field office personnel cellular telephones.
 3. Provide a cellular telephone for superintendent's use in making and receiving telephone calls when away from field office.
- K. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
1. Provide fire extinguishers, installed on walls on mounting brackets, visible and accessible from space being served, with sign mounted above.
 - a. Field Offices: Class A stored-pressure water-type extinguishers.
 - b. Other Locations: Class ABC dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for exposures.
 - c. Locate fire extinguishers where convenient and effective for their intended purpose; provide not less than two extinguishers on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.
 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting. Prohibit smoking in hazardous fire-exposure areas.
 4. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

TEMPORARY UTILITIES

5. Permanent Fire Protection: At earliest feasible date in each area of Project, complete installation of permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
6. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
7. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.2 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary utilities. To minimize waste and abuse, limit availability of temporary utilities to essential and intended uses.
- B. Maintenance: Maintain utilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.
 1. Maintain operation of temporary heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

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SECTION 015600

TEMPORARY BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary barriers and enclosures, including but not limited to, the following:
 - 1. Environmental protection.
 - 2. Tree and plant protection.
 - 3. Site enclosure fence.
 - 4. Security enclosure and lockup.
 - 5. Barricades, warning signs, and lights.
 - 6. Temporary partitions.

1.2 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to, the following:
 - 1. Building Code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, Fire Department and Rescue Squad rules.
 - 5. Environmental protection regulations.
 - 6. City ordinances and regulations.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rail.
 - 1. Provide green colored screening material full height of chain-link fence fabric including gates to reduce visibility through fencing where adjacent to existing operations or along perimeter sidewalks in order to limit visibility directly from the school or students walking to the school site.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Locate temporary utilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify utilities as required.

TEMPORARY BARRIERS AND ENCLOSURES

- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. Avoid using tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near Project site.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from construction damage. Protect tree root systems from damage, flooding, and erosion.
- E. Site Enclosure Fence: Before construction operations begin install chain-link enclosure fence with lockable entrance gates if required to secure the project site beyond existing fence. Enclose entire Project site or portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering site except by entrance gates.
 - 1. Provide gates in sizes and at locations necessary to accommodate delivery vehicles and other construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
- F. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- G. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
 - 1. Construct dustproof, floor-to-ceiling partitions of not less than nominal 4-inch studs, 2 layers of 3-mil polyethylene sheets, inside and outside temporary enclosure. Cover floor with 2 layers of 3-mil polyethylene sheets, extending sheets 18 inches up the side walls. Overlap and tape full length of joints. Cover floor with 3/4-inch fire-retardant plywood.
 - 2. Insulate partitions to provide noise protection to occupied areas.
 - 3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
 - 4. Weatherstrip openings.

3.2 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

TEMPORARY BARRIERS AND ENCLOSURES

- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of Contractor.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Closeout Procedures".

END OF SECTION

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SECTION 016000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirement 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. Administrative procedures for handling requests for substitutions made after award of Contract are included in another Division 01 Section "Substitution Procedures".
- C. Procedures for receiving and installing products furnished by Owner are included in another Division 01 Section "Owner Furnished Products".

1.2 PERFORMANCE REQUIREMENTS

- A. Contractor shall comply with environmental laws controlling hazardous substances.

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 Products: Items that are 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, and equipment from those required by the Contract Documents and proposed by Contractor. Refer to Division 01 Section "Substitution Procedures".
- C. Basis-of-Design Product Standard Specification: Where a specific manufacturer's product is named and accompanied by the words "Product Standard," 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.
- D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- E. 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.

PRODUCT REQUIREMENTS

- F. Hazardous Substances Prohibited by Law: Including, but not limited to, any product, material, element, constituent, chemical, substance, compound, or mixture, which is defined in, included under, or regulated by any environmental laws.
- G. Environmental Laws: Applicable local, state, and federal laws, rules, ordinances, codes, regulations, and requirements in effect at the time Contractor's services are rendered, any amendments for Contractor's services rendered after the effective date of any such amendments, including, without limitation, the following:
 - 1. The Comprehensive Environmental Response, Compensation and Liability Act of 1980.
 - 2. The Resource Conservation and Recovery Act.
 - 3. The Toxic Substances Control Act.
 - 4. The Clean Water Act.
 - 5. The Clean Air Act.
 - 6. The Marine Protection Research and Sanctuaries Act.
 - 7. The Occupational Safety and Health Act.
 - 8. The Superfund Amendments and Reauthorization Act of 1986.
 - 9. The Environmental Protection Agency.
 - 10. Other state superlien or environmental clean-up or disclosure statutes including all state and local counterparts of such.

1.4 SUBMITTALS

- A. Contractor shall submit an affidavit on construction company letterhead signed by an officer of the company, notarized by a notary public, which certifies compliance with the environmental laws controlling hazardous substances for the construction of this Project.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products or materials for use on Project, product or material selected shall be compatible with products or materials previously selected, even if previously selected products or materials were also options.
- B. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to the Architect.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- C. Compliance: Contractor shall take whatever measures deemed necessary to insure that all employees, suppliers, vendors, fabricators, subcontractors, or their assigns, to comply with hazardous substance requirements.

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 manufacturers written instructions.
 - 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 and materials 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.

PRODUCT REQUIREMENTS

4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products to allow for inspection and measurement of quantity or counting of units.
6. Store products in a manner that will not endanger Project structure.
7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
8. Comply with product manufacturers written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
9. Protect stored products from damage.

1.7 PRODUCT AND MATERIAL WARRANTIES

- A. General: 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.
- B. General Warranty: Special warranties specified in each Section shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- C. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- D. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures".

PART 2 - PRODUCTS

2.1 PRODUCT SELECTIONS

- 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. 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. Products and materials brought onto the Project Site, and products and materials incorporated into the Work, shall comply with environmental laws.
- B. Descriptive Specification Requirements: Where Specifications describe a product, or assembly, listing exact characteristics required, without use of a brand or trade name, provide a product, material or assembly that provides the characteristics and otherwise complies with Contract requirements.

PRODUCT REQUIREMENTS

- C. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product or material is specified for a specific application.
 - 1. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
- D. Compliance with Standards, Codes and Regulations: Where Specifications only require compliance with imposed code, standard or regulation, select product that complies with standards, codes or regulations specified.
- E. Visual Matching Specification: Where Specifications require matching an established sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.
 - 1. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.
- F. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.
 - 1. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.
 - 2. Custom Range: Where Specifications include the phrase "custom range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.
 - 3. Special Custom Range: Where Specifications include the phrase "special custom range of colors patterns, textures" or similar phrase, Architect will select a new color, pattern, or texture different from those normally produced by the manufacturer.
- G. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

2.2 PRODUCT OPTIONS

- A. For products proprietarily specified by a "Named Manufacturer" and model name or number, this is to establish standard of quality. Other manufacturers listed as "Acceptable Manufacturers" have been listed because they have implied compliance with requirements of the "Named Manufacturer". Listed "Acceptable Manufacturers" are not considered "Substitutions", and therefore, are not required to be submitted as such. However, costs, including professional service fees for changes or modifications to adjacent, contiguous, surrounding, supporting, or otherwise related areas, portions or parts of Project which are required to accommodate products and materials of "Acceptable Manufacturers", for complete, proper and functional installation, in lieu of specified "Named Manufacturer", shall be borne or paid by Contractor.
- B. For products specified by naming several "Acceptable Manufacturers", select one of products, or manufacturers named, which complies with Contract Documents. Requests for manufacturer's products not listed must be submitted as Substitutions.
- C. For products specified by naming only one product, or manufacturer, Contractor must submit request as for substitutions for product, or manufacturer not specifically named.

PRODUCT REQUIREMENTS

- D. For products specified by naming only one product and manufacturer and indicated as "no substitute", there is no option.
- E. For products specified only by reference standard, select product meeting that standard.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- B. Inspect products immediately upon delivery and again prior to installation. Reject damaged and defective items.
- C. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- D. Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- E. Recheck measurements and dimensions, before starting each installation.
- F. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible product or material as necessary to prevent deterioration.
- G. Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.
- H. Handle, install, connect, clean, condition and adjust products and materials in accord with manufacturer's instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with manufacturer for further instructions.
 - 2. Do not proceed with work without clear instructions.
- I. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

PRODUCT REQUIREMENTS

- J. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

3.2 RESTRICTION OF HAZARDOUS SUBSTANCES

- A. Contractor agrees that it shall not knowingly after reasonable diligence and effort, incorporate into the Work any hazardous substance other than as may be lawfully contained within products, except in accordance with applicable environmental laws. Further, in performing any of its obligations hereunder, Contractor shall not cause any release of hazardous substances into, or contamination of, the environment, including soil, the atmosphere, any watercourse or ground water, except in accordance with applicable environmental laws. In the event that Contractor engages in any of the activities prohibited in this paragraph, to the fullest extent permitted by law, Contractor hereby indemnifies and holds harmless Owner and its partners, members, officers, directors, agents, employees and consultants from and against any and all claims, damages, losses, causes of action, suits and liabilities of every kind, including, but not limited to, expenses of litigation, court costs, punitive damages and attorney's fees, arising out of, incidental to or resulting from the activities prohibited.
- B. In the event Contractor observes on the Project Site any substance which Contractor reasonably believes to be a hazardous substance, and which is being introduced into the Work, or exists on the Project Site, in a manner violative of any applicable environmental laws, Contractor shall immediately notify Owner and report the condition to Owner in writing. The Work in the affected area shall not thereafter be resumed except by written authorization of Owner if in fact a hazardous substance has been encountered and has not been rendered harmless. In the event that Contractor fails to give Owner proper notification hereunder, upon knowingly observing a hazardous substance at the Project Site, to the fullest extent permitted by the law, Contractor hereby indemnifies and holds harmless Owner, and all of its partners, members, officers, directors, agents, employees and consultants from and against all claims, damages, losses, causes of action, suits and liabilities of every kind, including, but not limited to, expenses of litigation, court costs, punitive damages and attorneys' fees, arising out of, incidental to, or resulting from Contractor's failure to stop the Work.
- C. If Owner believes that hazardous substances may have been located, generated, manufactured, used or disposed of on or about the Project Site by Contractor or any of its employees, agents, subcontractors, suppliers, or invitees, Owner may have environmental studies of the Project Site conducted as it deems appropriate, and Contractor shall be responsible for the cost of such studies to the extent that Contractor or any of its employees, agents, subcontractors, suppliers or invitees are responsible for the presence of any hazardous substances.

END OF SECTION

SECTION 016400

OWNER FURNISHED PRODUCTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes work required to relocate and install owner furnished products indicated by Contract Documents and furnish supplementary items necessary for their proper installation.

1.2 SUBMITTALS

- A. Obtain following from Owner or Owner's product manufacturer:
 - 1. Shop drawings for product requirements.
 - 2. Installation drawings for items requiring coordination with work of other Sections.
 - 3. Actual layout of installations pertinent to this Work.
 - 4. Rough-in requirements.

1.3 QUALIFICATIONS

- A. Installation of Owner furnished products shall be by skilled experienced and qualified mechanics of the appropriate trade for the work involved.

PART 2 - PRODUCTS

2.1 OWNER FURNISHED, OWNER INSTALLED PRODUCT

- A. The specific product is not in this contract, and actual installation of the product will be made by the Owner.
- B. Products will be indicated as follows:
 - 1. Product prefixed with "Space for"
 - 2. N.I.C.
 - 3. Owner Furnished - Owner Installed
 - 4. Product noted as "Future"
- C. Roughing-in for Owner Furnished, Owner Installed Product is provided by applicable Sections governing the type of work. Obtain rough-in requirements from Owner.

2.2 OWNER FURNISHED, CONTRACTOR INSTALLED PRODUCT

- A. Install products indicated as follows:
 - 1. Owner Furnished, Contractor Installed".
 - 2. "Reuse".
 - 3. "Relocate."
- B. Provide labor, transportation, materials, tools, appliances and utilities necessary for the following:
 - 1. Removing installed product from the Owner's existing facility, as required.
 - 2. Transportation of product from Owner's facility to the job site.
 - 3. Receiving and storage of Owner furnished, Contractor installed product, as required.

OWNER FURNISHED PRODUCTS

4. Providing materials and components for the product as necessary to install in an operating condition, but not including repairing of existing damages to the product.
5. Modification of product only as specified under the particular item.
6. Installation of product in this project, complete and in operating condition, including the adjusting and calibration of the product as necessary for proper operation.
7. Testing of product.
8. Paying of fees, licenses, and taxes in conjunction with the installation of the product.
9. Roughing-in and final utility connections for the Owner furnished, Contractor installed product remains the work of Sections governing the specific utility.

PART 3 - EXECUTION

3.1 COORDINATION

- A. Coordinate work of this Section with related work of other Sections to obtain proper installation of items. Become acquainted with the work of other Sections whose work abuts, adjoins or is in any way affected by or related to work under this Section.
- B. Carefully examine the drawings and directions and be responsible for proper installation of materials and product without substantial changes.
- C. Indication of pipe connection sizes on the plans shall in no way relieve Contractor of the responsibility of checking and verifying their sizes and locations from the actual product to be installed and any available roughing-in diagrams.

3.2 PRODUCT INSTALLATION - GENERAL

- A. Locations: The general arrangement of the Owner Furnished Product is indicated on the drawings.
- B. Roughing-in: When product is not available prior to the installation schedule, rough-in the utility service at walls or floors as directed, and leave ready for future connection.
- C. Installations: Install product and material in conformance with manufacturer's directions where available. Work shall be assembled and installed in harmony with other trades at such times and in such sequence as acceptable to the Owner.

3.3 PROTECTION TO PRODUCT AND MATERIALS

- A. Utilities: Close pipe openings with caps or plugs, and protect electrical work as necessary.
- B. Product: Tightly cover and protect product against dirt, water and mechanical or chemical injury.
- C. Damage to Owner's property due to fault or negligence of the Contractor shall be repaired or replaced at no additional expense to the Owner.

3.4 REMOVING PRODUCT FROM EXISTING FACILITY

- A. Schedule for removal of product from existing facility shall be coordinated with Owner's requirements.
- B. Minimize shut down of existing building operations.
- C. No utilities may be turned off without the Owner's approval.
- D. Take necessary precaution to protect building and occupants from injury due to work of this Section.

OWNER FURNISHED PRODUCTS

- E. Cover and insulate exposed wires to removed product.
- F. Adequately cover floor openings and flag projections as necessary.

3.5 SCHEDULE OF OWNER FURNISHED, CONTRACTOR INSTALLED PRODUCTS

- A. Refer to drawings.

END OF SECTION

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SECTION 017000

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work.

1.2 SUBMITTALS

- A. Qualification Data: For land surveyor or professional engineer to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Final Topographical and Property Survey: After the Work is completed, submit one paper and electronic copy showing the Work performed and record survey data, including a digital copy in AutoCAD.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: Engage a professional land surveyor or engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility company that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Refer to Division 01 Section "Project Communications".

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- C. Final Topographical and Property Survey: After the Work is completed, prepare a final topographical and property survey showing significant features (real property) for Project with one foot contour increments. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, contours, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

EXECUTION REQUIREMENTS

- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights recommended by industry standards.
 - 2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

EXECUTION REQUIREMENTS

- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
 - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Control."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.

EXECUTION REQUIREMENTS

- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 017310

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures for major cutting and patching at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how it will be performed, and indicate why it cannot be avoided.
 - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

CUTTING AND PATCHING

- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
 - 1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

CUTTING AND PATCHING

- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

END OF SECTION

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SECTION 017700

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Project Record Documents.
3. Operation and maintenance manuals.
4. Warranties.
5. Instruction of Owner's personnel.
6. Final cleaning.
7. Final As-Built survey
8. Attic Stock Items

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and photographic negatives, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems.
9. Submit test/adjust/balance records.
10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
11. Advise Owner of changeover in heat and other utilities.
12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
13. Complete final cleaning requirements, including touchup painting.
14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
15. Attic stock or extra materials for the Owner are not to be used for punchlist or warranty work, unless permission is given. In such case, the material is to be restocked and provided to the Owner.
16. Final Topographical and Property Survey: Submit one paper and electronic copy of the site, including all new and existing structures, sealed by a licensed surveyor, including a digital copy in AutoCAD.

CLOSEOUT PROCEDURES

- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures".
 - 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report and warranty.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

1.5 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.
- B. Electronic File of Project Record Documents: Provide Architect with an independent electronic archive of accepted project record documents using electronic project management software as defined in Division 01 Section "Project Management and Coordination", in addition to the printed documents described below.

CLOSEOUT PROCEDURES

- C. Record Drawings: Maintain and submit one set of reproducible Contract Drawings and one set of blue- or black-line white prints of Shop Drawings.
1. Mark Record Drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- D. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Note related Change Orders, Record Drawings, and Product Data, where applicable.
- E. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.
- F. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.6 OPERATION AND MAINTENANCE MANUALS

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
1. Operation Data:
 - a. Emergency instructions and procedures.
 - b. System, subsystem, and equipment descriptions, including operating standards.
 - c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
 - d. Description of controls and sequence of operations.
 - e. Piping diagrams.
 2. Maintenance Data:
 - a. Manufacturer's information, including list of spare parts.
 - b. Name, address, and telephone number of Installer or supplier.
 - c. Maintenance procedures.
 - d. Maintenance and service schedules for preventive and routine maintenance.
 - e. Maintenance record forms.
 - f. Sources of spare parts and maintenance materials.
 - g. Copies of maintenance service agreements.
 - h. Copies of warranties and bonds.
- B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.7 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 REQUIRED DOCUMENTS TO BE PROVIDED TO THE OWNER

- 2 - Sets of As-Built Drawings (Hard Copy)
 - 1 Set is to be provided to IDEA HQ
 - 1 Set is to be provided to the Project Specific Campus
- 1 – CD of As-Built Drawings provided to IDEA HQ
- 2 - Sets of Close-Out Binders
 - 1 Set is to be provided to IDEA HQ
 - 1 Set is to be provided to the Project Specific Campus

Required Electronic Documents sent to Owner's Representative

- Punch Lists
- Special Tests
- Special Inspector Sign-Off
- Asbestos Affidavit
- Certificate of Occupancy
- Certificate(s) of Substantial Completion
- Owner Training / System Demonstrations (Sign-In sheet w/ hours)
- Change Orders
- As-Built Drawings
- Spare Parts / Attic Stock (Transmittal of delivery to Campus & IDEA sign-off)
- Subcontractor / Supplier Contact List
- Warranties
- Elevation Certificates
- Final Release of Liens
- Consent of Surety

3.2 DEMONSTRATION AND TRAINING

- A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
1. Provide instructors experienced in operation and maintenance procedures.
 2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 3. Schedule training with Owner with at least seven days' advance notice.
 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification

Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:

1. System design and operational philosophy.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
6. Maintenance.
7. Repair.

3.3 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
- C. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 1. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 4. Remove tools, construction equipment, machinery, and surplus material from Project site.
 5. Remove snow and ice to provide safe access to building.
 6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 7. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 8. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 9. Sweep concrete floors broom clean in unoccupied spaces.
 10. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 11. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials.
 12. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 13. Remove labels that are not permanent.
 14. Touch up and otherwise repair and restore marred, exposed finishes and surfaces.
 15. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 16. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 17. Wipe surfaces of mechanical, electrical, elevator, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 18. Replace parts subject to unusual operating conditions.
 19. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 20. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

CLOSEOUT PROCEDURES

21. Clean ducts, blowers, and coils if units were operated without filters during construction.
22. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
23. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
24. Leave Project clean and ready for occupancy.

- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

3.4 ATTIC STOCK ITEMS

- A. Provide the items to Owner at the end of the project as Attic Stock. Prior to delivery of items, coordinate location with Owner for storage of items. Maintain log or transmittal letters identifying provided items and record of person receiving them on behalf of the Owner.

END OF SECTION

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SECTION 019900

AVAILABLE PROJECT INFORMATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section references other information relevant to the construction of this Project that is available project information.
- B. At the request of the Owner, the information identified below represents services that have been provided by others, not as an Architect's Consultant, regarding conditions that affect this Project that are beyond the responsibilities of the Architect and Architect's Consultants. Reference to such information herein is solely for the convenience of the Owner. Architect makes no representation, express or implied, as to the accuracy or validity of the information.
- C. Bidders are expected to examine the site and the information available from the Owner to determine for themselves the conditions to be encountered.
- D. If conditions other than those indicated in the information available from the Owner are encountered before or during construction, notify the Owner before work continues.

1.2 PROPERTY SURVEY

- A. The Owner's Surveyor has performed a property survey and the some of the survey information is included on the Drawings for the convenience of the Contractor.

PRODUCTS (NOT USED)

PART 2 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02060 - DEMOLITION

PART 1 - GENERAL:

SUBMITTALS:

The procedures proposed for the accomplishment of salvage and demolition work shall be submitted for approval. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

GENERAL REQUIREMENTS:

The work includes demolition or removal of all construction indicated or specified. All materials resulting from demolition work, except as indicated or specified otherwise, shall become the property of the Contractor and shall be removed from the limits of the property. Rubbish and debris shall be removed from the property daily unless otherwise directed so as to not allow accumulation inside or outside the building. Materials that cannot be removed daily shall be stored in areas specified by the Architect.

DUST CONTROL:

The amount of dust resulting from demolition shall be controlled to prevent the spread of dust to occupied portions of the building and to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create hazardous or objectionable conditions such as ice, flooding and pollution.

PROTECTION:

1. Protection of Existing Work: Before beginning any cutting or demolition work, the Contractor shall carefully survey the existing work and examine the drawings and specifications to determine the extent of the work. The Contractor shall take all necessary precautions to insure against damage to existing work to remain in place, to be reused, or to remain the property of the owner, and any damage to such work shall be repaired or replaced as approved by the Architect at no additional cost to the owner. The Contractor shall carefully coordinate the work of this section with all other work and construct and maintain shoring, bracing and supports, as required. The Contractor shall insure that structural elements are not overloaded and be responsible for increasing structural supports or adding new supports as may be required as a result of any cutting, removal, or demolition work performed under any part of this contract.

2. Protection of building from the Weather: The interior of the building and all materials and equipment shall be protected from the weather at all times.

3. Protection of Trees: Trees within the project site which might be damaged during demolition, and which is indicated to be left in place shall be protected by a 6-foot high fence. The fence shall be securely erected a minimum of 5-feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Any tree designated to remain that is damaged during the work under this contract shall be replaced.

4. Environmental protection: All work and Contractor operations shall comply with the requirements of SECTION: ENVIRONMENTAL PROTECTION.

BURNING: The use of burning at the project site of the disposal of refuse and debris will not be permitted.

USE OF EXPLOSIVES: Use of explosives will not be permitted.

PART 2 - EXECUTION:

EXISTING FACILITIES:

1. Structural, Walls, and Partitions: Existing walls and partitions indicated shall remain.

DISPOSITION OF MATERIAL:

1. Title of Materials: Title to all materials and equipment to be demolished, excepting owners salvage and historical items, is vested in the Contractor upon receipt of notice to proceed. The owner will not be responsible for the condition, loss or damage to such property after notice to proceed.
2. Material for Contractor Salvage: Material for salvage shall be stored as approved by the Architect. Salvage materials shall be removed from Owner's property before completion of the Contract. Material for salvage shall not be sold on the site.

CLEAN UP:

1. Debris and Rubbish: Debris created by the demolition of existing roofs shall be removed from site and buildings.
2. Debris Control: Debris shall be removed and transported in a manner as to prevent spillage on streets or adjacent areas.
3. Regulations: Local regulations regarding hauling and disposal apply.

END OF SECTION 02060

SECTION 06100 - ROUGH CARPENTRY

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Definition: Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated. Types of work in this section include rough carpentry for:

Finish carpentry is specified in another section within Division 6.

REFERENCES:

Lumber Standards: Comply with PS 20 70 and with applicable rules of the respective grading and inspecting agencies for species and products indicated.

Plywood Product Standards: Comply with PS 1 (ANSI A 199.1) or, for products not manufactured under PS 1 provision, with applicable APA Performance Standard for type of panel indicated.

SUBMITTALS:

Wood Treatment Data: Submit treatment manufacturer's instructions for proper use of each type of treated material.

Preservative Treatment: For each type specified, include certification by treating plant stating type of preservative retained and conformance with applicable standards.

For water borne treatment, include statement that moisture content of treated materials was reduced to a maximum of 15% prior to shipment to project site.

PRODUCT HANDLING:

Delivery and Storage: Keep materials dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within stacks.

JOB CONDITIONS:

Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

PART 2 PRODUCTS

LUMBER, GENERAL:

Factory mark each piece of lumber with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.

Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

Provide dressed lumber, S4S, unless otherwise indicated.

Provide seasoned lumber with 19% maximum moisture content at time of dressing.

Framing Lumber (2" through 4" thick) (Wd Frm):

For light framing (less than 6" wide), provide "Stud" grade lumber for stud framing and "Standard" grade for other light framing, any species.

For light framing (less than 6" wide), provide the following grade, any species:

For structural framing (6" and wider and from 2" to 4" thick), provide the following grade and species:

Select Structural grade.

No. 1 grade.

No. 2 grade.

No. 3 grade.

Any species of the specified grade.

Any species and grade which meets or exceeds the following values:

Fb (minimum extreme fiber stress in bending); 1500 psi.

E (minimum modulus of elasticity); 1,500,000 psi.

Exposed Framing Lumber (2" through 4" thick):

Where framing will not be concealed by other work, provide the following grade and species:

Douglas Fir, Appearance Framing (WCLB or WWPA).

Southern Pine, Appearance Grade, Kiln Dried (SPIB).

Redwood Clear All Heart (RIS).

Boards (less than 2" thick).

Exposed Boards: Where boards will be exposed in the finished work, provide the following:

Moisture Content: 19% maximum, "S DRY."

Where painted finish is indicated, provide Southern Pine, No. 2 Boards per SPIB, or Douglas Fir Construction Boards (WCLB or WWPA).

Concealed Boards: Where boards will be concealed by other work, provide lumber of 19% maximum moisture content (S DRY) and of following species and grade:

Board Sizes: Provide sizes indicated or, if not indicated (for sheathing, sub flooring and similar uses), provide 1" x 8" boards.

MISCELLANEOUS, LUMBER:

Provide wood for support or attachment of other work including cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:

Moisture content: 15% maximum for lumber items not specified to receive wood preservative treatment.

Grade: Construction Grade light framing size lumber of any species or board size lumber as required. Provide construction grade boards (RIS or WCLB) or No. 2 boards (SPIB or

WWPA).

PLYWOOD (Pwd):

Trademark: Identify each plywood panel with appropriate APA trademark.

Plywood Decking / Sheathing: Refer to Structural.

Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant treated plywood panels with grade designation, APA C-D PLUGGED INT with exterior glue, in thickness indicated, or, if not otherwise indicated, not less than ½".

Plywood Exterior Sheathing: Provide fire-retardant treated plywood panels with grade designation, APA C-D plugged exterior with exterior glue in thickness shown.

MISCELLANEOUS MATERIALS:

Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices.

Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

Where rough carpentry work is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners and anchorages with a hot dip zinc coating (ASTM A 153).

WOOD TREATMENT:

Preservative Treatment: Where lumber or plywood is indicated as "Trt Wd" or "Treated," or is specified herein to be treated, comply with applicable requirements of AWWA Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

Pressure treat above ground items with water borne preservatives complying with AWPB LP 2. After treatment, kiln dry to maximum moisture content, respectively of 19% and 15%. Treat indicated items and the following:

Wood cants, nailers, curbs, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.

Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

Inspect each piece of treated lumber or plywood after drying and discard damaged or defective pieces.

BARRIER MEMBRANE AND FLASHING:

Membrane over Plywood (exterior): Acceptable Product: Sharkskin Ultra SA™ as manufactured by: Kirsch Building Products LLC, 1464 Madera Road, Suite 387, Simi Valley, CA 93065; Tel: (805) 750-0084 Fax: 805-526-1116; www.sharkskin.us.

Provide a self-adhered roof underlayment that has passed the requirements set forth in ICC/ES Report 1708 and Miami/Dade TAS 103.

PART 3 – EXECUTION

INSTALLATION, GENERAL:

Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

Countersink fasteners on exposed carpentry work and fill holes.

Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.

WOOD GROUNDS, NAILERS, BLOCKING AND SLEEPERS:

Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

Provide permanent grounds of dressed, preservative treated, key beveled lumber not less than 1 1/2" wide and of thickness required to bring face of ground to exact thickness of finish material involved. Remove temporary grounds when no longer required.

Fire stop concealed spaces with wood blocking not less than 2" thick, if not blocked by other framing members. Provide blocking at each building story level and at ends of joist spans.

Installation of Plywood:

General: Comply with applicable recommendations contained in Form No. E 304, "APA Design/Construction Guide Residential & Commercial," for types of plywood products and applications indicated.

Fastening Methods: Fasten panels as indicated below:

Sheathing: Screw to framing.

Plywood Backing Panels: Screw to supports.

Provide 5/8" plywood blocking panels at all exterior signage locations.

END OF SECTION 06100

SECTION 07900 - JOINT SEALERS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Extent of each form and type of joint sealer is indicated on drawings and by provisions of this section.

Refer to Division 8 sections glazing requirements; not work of this section.

Refer to sections of Division 15 and 16 for joint sealers in mechanical and electrical work; not work of this section.

General Performance: Except as otherwise indicated, joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.

SUBMITTALS:

Product Data: Submit manufacturer's product specifications, handling/installation/curing instructions, and performance tested data sheets for each elastomeric product required.

JOB CONDITIONS:

Weather Conditions: Do not proceed with installation of liquid sealants under unfavorable weather conditions. Install elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.

PART 2 - PRODUCTS

MATERIALS:

General Sealer Requirements: Provide colors indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors. Select materials for compatibility with joint surfaces and other indicated exposures, and except as otherwise indicated select modules of elasticity and hardness or grade recommended by manufacturer for each application indicated. Where exposed to foot traffic, select non-tracking materials of sufficient strength and hardness to withstand stiletto heel traffic without damage or deterioration of sealer system.

Sealant: (with expansion and compression capability of plus or minus 50%).

Silpruf Silicone weatherproofing sealant: General Electric

790 Building Sealant: Down Corning

Caulking:

NP -2 Sonneborn. Polyurethane

Install at all locations where notes as "caulk" or required to provide a neat joint.

Expansion Joint Sealer:

ACMA Seal: ACME Highway Products Corp., Buffalo, N.Y. 14207

System: Series "J", Style No. 2-602, 1-3/4" wide x 2" high.
Install with manufacturer's ACMA Lubricant Adhesive.

Wall Penetration Sealant:

Fire Barrier Silicone Sealant - 3M™ Fire Barrier Silicone Sealant 2000+ or approve equal.

Fire Barrier Foam Sealant - 3M™ Fire Barrier Rated Foam FIP 1-Step or approve equal.

Foam Joint Filters:

Expanded Polyethylene Joint Filler (ExPe -JF): Provide flexible, compressible, closed - cell, polyethylene of not less than 10 psi compression deflection (25%) except provide higher compression deflection strength as may be necessary to withstand installation forces and provide proper support for sealants; surface water absorption of not more than 0.1 lbs. per sq. ft.

MISCELLANEOUS MATERIALS:

Sealant backer Rod (S -Br): Provide compressible rod stock of polyethylene foam, polyurethane foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable non-absorptive material as recommended by sealant manufacturer for backup of an compatibility with sealant. When used with hot -applied sealant, provide heat -resistant type which will not be deteriorated by sealant application temperature as indicated.

PART 3 - EXECUTION

INSPECTION:

Installer must examine substrates, (joint surfaces) and conditions under which joint sealer work is to be performed and must notify Contractor in writing of unsatisfactory conditions. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

JOINT PREPARATION:

Clean joint surfaces immediately before installation of gaskets, sealant or caulking compounds. Remove dirt, insecure coatings, moisture and other substances which could interfere with seal of gasket or bond of sealant or caulking compound. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous and glazed joint surfaces as recommended by sealant manufacturer.

Prime or seal joint surfaces where indicated, and where recommended by sealant manufacturer. Confine primer/sealer to areas of sealant bond; do not allow spillage or migration onto adjoining surfaces.

INSTALLATION:

Install at exterior doors, glass frames (both interior and exterior of frames), exterior louvers, windows, exterior joints in walls and other locations where indicated or required to provide weather tight joints. Indicated for floor or wall assembly in which penetration occurs.

Install in accordance with manufacturer's recommendations.

Produce beads of proper width and depth.

Tool as recommended by manufacturer.

Remove surplus materials.

Study drawings and furnish and install proper materials at each point where called for on the drawings plus all other points essential to continued integrity of the watertight barrier.

CURE AND PROTECTION

Cure sealants and caulking compounds in compliance with manufacturer's instructions and recommendations, to obtain high early bond strength, internal cohesive strength and surface durability. Advise the Contractor of procedures required for cure and protection of joint sealer during construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at time of substantial completion. Cure and protect sealants in a manner which will minimize increases in modulus of elasticity and other accelerated aging effects. Replace or restore sealant which are damaged or deteriorated during construction period.

END OF SECTION 07900

SECTION 08100 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Extent of standard steel doors and frames is indicated and scheduled on drawings.

Custom hollow metal work is specified in other Division 8 sections.
Builder's hardware is specified elsewhere in Division 8. Galvanized

QUALITY ASSURANCE:

Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI 100) and as herein specified.

Provide Hurricane Resistant Steel Doors and Frames Equal to: Steel Craft Mfg. Co. H-Series Doors at all exterior door openings.

Manufacturer: Provide standard steel doors and frames by a single firm specializing in production of this type of work. Acceptable Manufacturer's:

Texas Door Products
Ceco Corp.
Republic Builders Prod. Corp.
Tex Steel Corp.
Pearland Industries
Deansteel

Provide galvanized and insulated doors and frames at exterior conditions only.

SUBMITTALS:

Product Data: Submit manufacturer's specifications for fabrication and installation, including data substantiating that products comply with requirements.

Shop Drawings: Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.

Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.

Wind Pressures Requirements: Submit documentation stating the door and frame system has been designed to meet the project wind pressure as defined by the structural engineer.

Label Construction Certification: Submit manufacturer's certification for oversize fire rated doors and frames that each assembly has been constructed with materials and

methods equivalent to requirements for labeled construction.

DELIVERY, STORAGE AND HANDLING:

Deliver hollow metal work in cartons or crates to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory finished doors.

Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.

Store doors and frames at building site under cover. Place units on wood sills at least 4" high, or otherwise store on floors in manner that will prevent rust and damage. Avoid use of non vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4" spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

MATERIALS:

Hot Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.

Cold Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM A 568.

Supports and Anchors: Fabricate of not less than 18 gage galvanized sheet steel.

Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot dip galvanized items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.

Shop Applied Paint:

Primer: Rust inhibitive enamel or paint, either air drying or baking, suitable as a base for specified finish paints.

FABRICATION, GENERAL:

Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at project site.

Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, from only cold rolled steel.

Fabricate frames, concealed stiffeners, reinforcement, edge channels, louvers and moldings from either cold rolled or hot rolled steel (at fabricator's option).

Finish Hardware Preparation:

Prepare doors and frames to receive mortised and concealed finish hardware in accordance with final Finish Hardware Schedule and template provided by hardware

supplier. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware. Exterior doors shall be fabricated and assembled using frame, hinge, and locking hardware as indicated on third party test report.

Reinforce doors and frames to receive surface applied hardware. Drilling and tapping for surface applied finish hardware may be done at project site.

Locate finish hardware as indicated on final shop drawings or, if not shown, in accordance with "Recommended Locations for Builder's Hardware," published by Door and Hardware Institute.

Shop Painting:

Clean, treat, and paint exposed surfaces of steel door and frame units, including galvanized surfaces.

Clean steel surfaces of mill scale, rust, oil, grease, dirt, and other foreign materials before application of paint.

Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.

STANDARD STEEL DOORS:

Provide metal doors of types and styles indicated on drawings or schedules.

	1 3/4" doors
Stiles	16 ga.
Panels	16 ga.
Hinge Tap Plate	9 ga.
Hinges	1 1/2 pair 4 1/2 x 4 1/2 full mortise template typ
Lock reinforcement	3/32" steel
Lock Set	See Hardware Schedule
Door Closer Reinforcement	9 ga.
Insulated	PolyurethaneR-5

STANDARD STEEL FRAMES:

Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings, unless otherwise indicated.

Frames shall be 16 gauge
Fabricate frames with metered corners, knocked down not acceptable.
Provide HD Galvanized Doors and Frames at all exterior conditions.

Door Silencers: Except on weatherstripped frames, drill stops to receive 2 silencers on strike jambs of single swing frames and 3 silencers on heads of double swing frames.

Glazing Stops: 16 ga. steel channel with predrilled holes for flat heads of double sink screws.

PART 3 - EXECUTION

INSPECTION:

Installer must examine substrate and conditions under which steel doors and frames are to be installed and must notify Contractor in writing of any conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

INSTALLATION:

General: Install standard steel doors, frames, and accessories in accordance with final shop drawings, manufacturer's data, and as herein specified.

Placing frames:

Comply with provisions of SDI 105 "Recommended Erection Instructions for Steel Frames", unless otherwise indicated.

Except for frames located at in place concrete or masonry and at drywall installations, place frames prior to construction at enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels. Building in of anchors and grouting of frames is specified in Division 4.

At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.

Install fire rate frames in accordance with NFPA STD. No. 80.

In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with tapping screws.

Door Installation:

Fit hollow metal doors accurately in frames, within clearances specified in SDI 100.

Place fire rated doors with clearances as specified in NFPA Standard No. 80.

ADJUST AND CLEAN:

Prime Coat Touch up: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch up of compatible air-drying primer.

Protection Removal: Immediately prior to final inspection, remove protective plastic wrappings from pre-finished doors.

Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF SECTION 08100

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Extent of aluminum entrances and storefronts is shown on drawings and schedules.

Types of aluminum entrances and storefronts required include the following:

- Aluminum entrance frames.
- Aluminum sash and sidelight.
- Miscellaneous items required for complete installation.
- Hardware for aluminum entrances.

Glazing: Refer to "Glass and Glazing" section of Division 8 for glazing requirements for aluminum entrances and storefronts, including doors specified herein to be factory pre-glazed.

Mortise cylinders are specified in Division 8 hardware section.

QUALITY ASSURANCE:

Drawings are based on one manufacturer's standard aluminum entrance and storefront system. Another standard system of a similar and equivalent nature will be acceptable when differences do not materially detract from design concept or intended performances, as judged solely by Architect.

Field Measurement: Wherever possible, take field measurements prior to preparation of shop drawings and fabrication, to ensure proper fitting of work. However, proceed with fabrication and coordinate installation tolerances as necessary when field measurements might delay work.

REFERENCES:

Standards: Comply with applicable provisions of "Metal Curtain Wall, Window, Storefront, and Entrance Guide Specifications Manual" by AAMA.

SUBMITTALS:

Product Data: Submit manufacturer's specifications, standard details, and installation recommendations for components of aluminum entrances and storefronts required for project, including data that products have been tested and comply with performance requirements.

Shop Drawings: Submit shop drawings for fabrication and installation of aluminum entrances and storefronts, including elevations, detail sections of typical composite members, anchorages, reinforcement, expansion provisions, and glazing. Provide shop drawings with approved anchoring for compliance with ASTM testing procedure.

Wind Pressure: Submit documentation stating the storefront system has been designed to meet Project wind pressure defined by the structural engineer and impact requirements for TDI certification.

PART 2 PRODUCTS

MATERIALS AND ACCESSORIES:

Basis of Design: Kawneer IR-501 Aluminum Storefronts.

Basis of Design: Kawneer IR-350 Outswing Glass Door

Acceptable Manufacturers: (Must meet requirements of ASTM 1886, if applicable)
Kawneer Company, Inc.
Oldcastle Building Envelope

Aluminum Members with Rugged Frame: Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish; ASTM B 221 for extrusions, ASTM B 209 for sheet/plate.

Thickness: Major portions of sections shall be .125-inch minimum thickness. Moldings, trim and glass stops shall be .050 minimum thickness.

Fasteners: Aluminum, nonmagnetic stainless steel, or other materials warranted by manufacturer to be non-corrosive and compatible with aluminum components.

Do not use exposed fasteners except where unavoidable for application of hardware. Match finish of adjoining metal.

Provide Phillips flat head machine screws for exposed fasteners.

Brackets and Reinforcements: Manufacturer's high strength aluminum units where feasible; otherwise, nonmagnetic stainless steel or hot dip galvanized steel complying with ASTM A 386.

Concrete/Masonry Inserts: Cast iron, malleable iron, or hot dip galvanized steel complying with ASTM A 386.

Compression Weatherstripping: Manufacturer's standard replaceable stripping of either molded neoprene gaskets complying with ASTM D 2000 or molded PVC gaskets complying with ASTM D 2287.

Glass and Glazing Materials: Provide glass and glazing materials which comply with requirements of "Glass and Glazing" section of these specifications. Exterior glazing shall meet project wind pressure.

Aluminum entrance door and window assemblies shall be tested per ASTM E 330 for standard uniform wind pressure. Tested assemblies shall be rated to meet or exceed project wind pressures.

HARDWARE:

General: Refer to hardware section of Division 8 for requirements for hardware items other than those indicated herein to be provided by manufacturer of aluminum entrances.

Provide door manufacturer's severe weather certified hardware units as indicated, scheduled, or required for operation of each door complying with testing reports or product evaluation report. Provide ICC Compliant Report.

Required Hardware and Accessories (each door leaf):
Continuous Piano Hinge (8-wire Electric)
Panic Hardware (Electric)
Door Pulls
Astragal
Closers
Weatherstripping
Accessible Threshold

Refer to Section 08700 - Builders Hardware for additional requirements. Refer to Section 08700 - Builders Hardware for additional requirements. Refer to Section 08700 for requirements for hardware items other than those indicated herein to be provided by manufacture of aluminum entrances.

FABRICATION:

General:

Sizes and Profiles: Required sizes for door and frame units, including profile requirements, are indicated on drawings. Any variable dimensions are indicated, together with maximum and minimum dimensions required to achieve design requirements and coordination with other work.

Details shown are based upon standard details by manufacturer indicated. Similar details by other manufacturers listed will be acceptable, provided they comply with other requirements including profile limitations.

Prefabrication: To greatest extent possible, complete fabrication, assembly, finishing, hardware application, and other work before shipment to project site. Disassemble components only as necessary for shipment and installation.

Do not drill and tap for surface mounted hardware items until time of installation at project site.

Sequence: Complete cutting, fitting, forming, drilling, and grinding of metal work prior to cleaning, finishing, surface treatment, and application of finishes. Remove arises from cut edges and ease edges and corners to radius of approximately 1/64".

Welding: Comply with AWS recommendations to avoid discoloration; grind exposed welds smooth and restore mechanical finish.

Reinforcing: Install reinforcing as necessary for performance requirements; separate dissimilar metals with bituminous paint or other separator which will prevent corrosion.

Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members.

Fasteners: Conceal fasteners wherever possible.

Weatherstripping: For exterior doors, provide compression weatherstripping against fixed stops; at other edges, provide sliding weatherstripping retained in adjustable strip mortised into door edge.

Provide heavy duty, hollow, compression weatherstripping in bottom door rail, adjustable for contact with threshold.

Storefront Framing System (AL SF): Storefront and assembly shall be designed to comply with ASTM E 1886, BCCO PA 201, PA 202 AND PA 203.

General: Inside outside matched resilient flush glazed system, fabricated for stick type erection procedure with provision for glass replacement.

Frames: Frames, mullions and transom bars shall be constructed of aluminum extrusions, size 1 -3/4" x 4 -1/2" x 1/8" minimum wall thickness unless otherwise indicated on the drawings.

End Dam: Provide end dams at each side of sill condition at base or transom panel.

Glazing: Fabricate doors to facilitate replacement of glass or panels, without disassembly of door stiles and rails. Provide snap on extruded aluminum glazing stops, with exterior stops anchored for non removal.

FINISHES:

Natural Anodized Aluminum Finish

PART 3 EXECUTION

INSTALLATION:

Comply with manufacturer's instructions and recommendations for installation of aluminum entrances and storefronts.

Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Anchor securely in place, separating aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

Drill and tap frames and doors and apply surface mounted hardware templates, complying with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.

Set sill members and other members in bed of compound as shown, or with joint fillers or gaskets as shown to provide weather tight construction. Comply with requirements of Division 7 for compounds fillers, and gaskets.

Refer to "Glass and Glazing" section of Division 8 for installation of glass and other panels shown to be glazed into doors and framing, and not pre-glazed by manufacturer.

ADJUST AND CLEAN:

Adjust operating hardware to function properly, without binding, and to provide tight fit at contact points and weatherstripping.

Clean system, inside and out, after erection and installation of glass and sealants. Remove excess glazing and joint sealant, dirt, and other substances from aluminum surfaces. Remove protective coating when completion of construction activities no longer requires its retention.

Institute protective measures and other precautions required to assure that aluminum entrances and storefronts will be without damage or deterioration, other than normal

weathering, at time of acceptance.

END OF SECTION 08410

SECTION 08700 - BUILDERS HARDWARE

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification sections, apply to the work of this section.

DESCRIPTION OF WORK:

Definition: "Builders Hardware" includes items known commercially as builders' hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Types of items in this section include (but are not necessarily limited to):

- Hinges
- Pivots
- Lock cylinders and keys
- Lock and latch sets
- Bolts
- Exit devices
- Push/pull units
- Sliding door equipment
- Closures
- Overhead Holders
- Miscellaneous door control devices

QUALITY ASSURANCE:

Manufacturer: Obtain each kind of hardware (latch and lock sets, hinges, closures, etc.) from only one manufacturer, although several may be indicated as offering products complying with requirements.

Supplier: A recognized builders hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than 2 years, and who is, or has in employment, an experienced hardware consultant who is available, at reasonable times during the course of the work, for consultation about project's hardware requirements, to Owner, Architect and Contractor.

SUBMITTALS:

Product Data: Submit manufacturers' technical information for each item of hardware. Include whatever information may be necessary to show compliance with requirements, and include instructions for installation and for maintenance of operating parts and finish. Transmit copy of applicable data to Installer.

Hardware Schedule: Submit final hardware schedule in the manner and format specified, complying with the actual construction progress schedule requirements. Hardware schedules are intended for coordination of work.

Final Hardware Schedule: Based on builders hardware indicated, organize hardware schedule into "hardware sets" indicating complete designations of every item required for each door or opening. Include the following information:

- Type, style, function, size and finish of each hardware item.
- Name and manufacturer of each item.
- Fastenings and other pertinent information.
- Location of hardware set cross - referenced to indications on Drawings

both on floor plans and in door and frame schedule.
Explanation of all abbreviations, symbols, codes, etc. contained in schedule.
Mounting locations for hardware.
Door and frame sizes and materials.
Keying information.

Submittal Sequence: Submit schedule at earliest possible date particularly where acceptance of hardware schedule must precede fabrication of other work (e.g., hollow metal frames) which is critical in the project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by builders' hardware, and other information essential to the coordinated review of hardware schedule.

Keying Schedule: Submit separate detailed schedule indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.

PRODUCT HANDLING:

Packaging of hardware, on a set by set basis, is the responsibility of the supplier. As materials received by the hardware supplier from the various manufacturers, sort and repackage in containers marked with the hardware set number. Two or more identical sets may be packed in the same container.

Inventory hardware jointly with representatives of the hardware supplier and the hardware installer until each is satisfied that the count is correct.

Provide secure lock-up for hardware delivered to the project, but not yet installed. Control handling installation of hardware items which are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses, both before and after installation.

JOB CONDITIONS:

Coordination: Coordinate hardware with other work. Tag each item or package separately, with identification related to the final hardware schedule, and include basic installation instructions in the package. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security and similar requirements indicated, as necessary for proper installation and function. Deliver individually packaged hardware items at the proper times to the proper locations (shop or project site) for installation.

Templates: Furnish hardware templates to each fabricator of doors, frames and other work to be factory - prepared for the installation of hardware. Upon request, check the shop drawings of such other work, to confirm that adequate provisions are made for the proper installation of hardware.

PART 2 - PRODUCTS

SCHEDULED HARDWARE:

Requirements for design, grade, function, finish, size and other distinctive qualities of each type of builders hardware is indicated in the Builders Hardware Data Sheet and Hardware Schedule at the end of this section. Products are identified by using hardware designation numbers of the following.

Manufacturer's product designations: One or more manufacturers are listed for each hardware type required. An asterisk (*) after a manufacturer's name indicates whose product designation is used in the Hardware Schedule for purposes of establishing minimum requirements. Provide product designated, or, where more than one manufacturer is listed, the comparable product of one of the other manufacturers which comply with requirements including those specified elsewhere in this section.

MATERIALS AND FABRICATION:

General:

Hand of door: The drawings show the direction of slide, swing or hand of each door leaf. Furnish each item of hardware for proper installation and operation of the door movement as shown.

Base Metals: Produce hardware units of the basic metal and forming method indicated, using the manufacturer's standard metal alloy, composition, temper and hardness, but in no case of lesser (commercially recognized) quality than specified for the applicable hardware units by FS FF-H-106, FS FF-g-111, FS FF-E-116 and FS FF-H-121. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

Fasteners: Manufacture hardware to conform to published templates, generally prepared for machine screw installation. Do not provide hardware which has been prepared for self-tapping sheet metal screws, except as specifically indicated.

Furnish screws for installation, with each hardware item. Provide Phillips flat-head screws Finish exposed(under any condition) screws to match the hardware finish or , if exposed in surfaces of other work, to match the finish of such other work as closely as possible, including "prepared for paint" in surfaces to receive, painted finish.

Provide concealed fasteners for hardware units which are exposed when the door is closed, except to the extent no standard units of the type specified are available with concealed fasteners. Do not use through bolts for installation where the bolt head or the nut on the opposite face is exposed in other work, except where it is not feasible to adequately reinforce the work.

LOCK CYLINDERS AND KEYING:

Cylinders: Suppliers to provide interchangeable core rim cylinders at all locksets, deadbolt and panic hardware, where required for proper operation.

General: Supplier shall prepare the keying schedule according to the Owner's Keying Program and meet with Owner to finalize keying requirements and obtain final instructions in writing.

Keying System: Grandmaster key the locks to the campus, with a new master key for this project.

HARDWARE FINISHES:

Provide matching finishes for hardware units at each door or opening, to the greatest extent possible, and except as otherwise indicated. Reduce differences in color and textures as much as commercially possible where the base metal or metal forming

process is different for individual units of hardware exposed at the same door or opening. In general, match items to the manufacturer's standard finish for the latch and lock set (or push-pull units if no latch-lock sets) for color and texture.

Provide finishes which match those established by EEMA or, if none established, match the Architect's sample.

Provide quality of finish, including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturer's standards, but in no case less than specified for the applicable units of hardware by referenced standards.

Provide protective lacquer coating on all exposed hardware finishes of brass, bronze and aluminum, except as otherwise indicated.

The designations used in schedules and elsewhere to indicate hardware finishes are those listed in "Materials & Finishes Standard 1301" by EEMA, including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 - EXECUTION

INSTALLATION:

Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware" by the NEEA, except as specifically indicated or required to comply with governing regulations, and except as may be otherwise directed by Architect.

Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware to a surface which will later to be painted or finished in another way, coordinate removal, storage and reinstallation or application of surface protections with finishing work specified in the Division 9 sections. Do not install surface-mounted items until finishes have been completed on the substrate.

Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

Drill and countersink units which have not been factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

ADJUST AND CLEAN:

Adjust and clean each operating item of hardware and each door, to ensure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly as intended for the application made.

Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy, return to the work during the week prior to acceptance or occupancy to make final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

Instruct Owner's Personnel in proper adjustment and maintenance of hardware and hardware finishes, during the final adjustment of hardware.

MANUFACTURERS

Butts	Ives	Ives
Locksets	Schlage Lock Co.	Schl
Exit Device	Von Duprin	Von
Closers	LCN	LCN
Mullions	Von Duprin	Von
Stops	Ives	Ives
Silencers	Ives	Ives
Thresholds	Ives	Ives
Weatherstripping	Ives	Ives

Keys & Keying;

All locks, cylinders and deadbolts shall be Master Keyed as required by the Owner to the Existing Grand Master Key System. Provide cylinders to all locksets, exit devices, etc. whether noted or not. Cylinders to be keyed to existing master key system. Furnish two (2) keys per locking device. Existing cylinder cores are to be reused.

Schedule A – Aluminum Storefront Double Entry Doors

Continuous Hinge	(2) A110HD-Access Panel 8-wire-Door Height	ABH
Keyed Mullion	KR4954-B-154-MT154	Von
Panic Hardware	RX-QEL-99-DT-SNB 24VDC	Von
Panic Hardware	RX-QEL-99-NL-SNB 24VDC	Von
Closer	(2) 4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Weatherstripping (Mullion)	8878	Zero
Astragal	8195	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule B – Hollow Metal Double Entry Doors

Continuous Hinge	(2) A110HD-Access Panel 8-wire-Door Height	ABH
Keyed Mullion	KR4954-B-154-MT154	Von
Panic Hardware	RX-QEL-99-DT-SNB 24VDC	Von
Panic Hardware	RX-QEL-99-NL-SNB 24VDC	Von
Closer	(2) 4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Weatherstripping (Mullion)	8878	Zero
Astragal	8195	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule C – Aluminum Storefront Single Entry Door

Continuous Hinge	A110HD-Access Panel 8-wire-Door Height	ABH
Keyed Mullion	KR4954-B-154-MT154	Von
Panic Hardware	RX-QEL-99-DT-SNB 24VDC	Von
Closer	4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule D – Hollow Metal Door Single Entry Door (48" wide)

Continuous Hinge	A110HD-Access Panel 8-wire-Door Height	ABH
Keyed Mullion	KR4954-B-154-MT154	Von

Panic Hardware	RX-QEL-99-DT-SNB 24VDC	Von
Closer	4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule E – Hollow Metal Door Single Entry Door (36" wide)

Continuous Hinge	A110HD-Access Panel 8-wire-Door Height	ABH
Keyed Mullion	KR4954-B-154-MT154	Von
Panic Hardware	RX-QEL-99-DT-SNB 24VDC	Von
Closer	4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule F – Wood Door / HM Frame Single Entry Door to IDF Room

Electric Strike	8300 2001M 2006M	Schl
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Schedule G – Wood Door / HM Frame Double Door to IDF Room

Continuous Hinge	A110HD-Access Panel 8-wire-Door Height	ABH
Lockset	ND80EUPD - RHO - 626	Schl

Schedule H – Hollow Metal Door Single Entry Door to IDF Room

Continuous Hinge	A110HD-Access Panel 8-wire-Door Height	ABH
Lockset	ND80EUPD - RHO - 626	Schl
Closer	4040XPO SCUSH SNB	LCN
Weatherstripping	8878	Zero
Power Supply	Refer to MEP	
Card Reader	Refer to MEP	

Schedule I – Mag Lock Only

Magnetic Lock (ingress)	M420P	Alleg
Door Pull (ingress)	8190HD-2 626	Ives
Push Button Release	Refer to MEP	

SECTION 08800 - GLASS AND GLAZING

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Definitions: "Glass" includes prime glass, processed glass, and fabricated glass products. "Glazing" includes glass installation and materials used to install glass. Types of work in this section include glass and glazing for:

Window wall/store front construction, safety or tempered glass.

Entrances and other doors, laminated safety.

"Glass Products" is hereby defined to include glazing plastics.

Packaged mirror units are specified as "specialties" in another section.

QUALITY ASSURANCE:

Prime Glass Manufacturer: One of the following for each type/color/pattern of glass:

ASG Industries, Inc.
C E Glass Division
Ford Glass Company
PPG Industries, Inc.

Prime Glass Standard: FS DD G 451

Heat Treated Glass Standard: FS DD G 1403

Safety Glass Standard: CPSC 16 CFR 1201.

The contractor shall submit shop drawings and test reports indicating the proposed window and exterior door assemblies meet the noted project design wind pressure requirements as defined by the Structural Engineer and impact requirements for TDI certification.

SUBMITTALS:

JOB CONDITIONS:

Pre-Installation: Meet with Glazier and other trades affected by glass installation, prior to beginning of installation. Do not perform work under adverse weather or job conditions. Install liquid sealants when temperatures are within lower or middle third of temperature range recommended by manufacturer.

PART 2 - PRODUCTS

GLASS PRODUCTS:

FABRICATED GLASS UNITS: At all interior door lites and interior windows

Laminated Safety Glass (Lmn-G-Sft): Laminate 2 sheets of clear float glass with a 30-mil film of polyvinyl buteral, by manufacturer's standard heat-plus-pressure process with dirt, air pockets and foreign substances excluded; 1/4" thick if not otherwise indicated.

Color: Clear

GLAZING SEALANTS AND COMPONENTS:

General: Provide color of exposed sealant/compound indicated or if not otherwise indicated, as selected by Architect from manufacturer's standard colors, or black if no color is so selected. Comply with manufacturer's recommendations for selection of hardness, depending upon the locations of each application, conditions at time of installations, and performance requirements as indicated. Select materials and variations or modifications, carefully for compatibility with surfaces contacted in the installation.

Butyl Rubber Glazing Sealant (BUR GS): Compound of polymerized butyl rubber and inert fillers, solvent based, 75% solids, complying with FS TT S 001657; tack free in 24 hrs. paintable, non-staining.

Preformed Butyl Rubber Glazing Sealant (PBUr GS): Compound of polymerized butyl rubber and inert fillers, with or without polyisobutylene modification, solvent based, 95% solids, formed and coiled on release paper; tack free in 24 hrs., paintable, non-staining; plain, pre-shimmed or reinforced as required for proper installation and setting of glass.

Oleo Resinous Glazing Compound (OR GC): Oil based glazing compound; non-staining and non-bleeding; provide proper type as required for either channel or face glazing; comply with FS TT G 410 for face glazing compound.

GLAZING GASKETS:

Structural Rubber Glazing Gaskets (StR GG): Neoprene extrusions fabricated into frames with molded corner units and zipper lock strips; comply with ASTM C 542.

Molded Neoprene Glazing Gaskets: (MN GG): Molded or extruded neoprene gaskets of the profile and hardness required for watertight construction; comply with ASTM D 2000 designation 2BC 415 to 3BC 620, black.

MISCELLANEOUS GLAZING MATERIALS:

Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

Setting Blocks: Neoprene or EPDM, 70 90 durometer hardness, with proven compatibility with sealants used.

Spacers: Neoprene or EPDM, 40 50 durometer hardness with proven compatibility with sealants used.

PART 3 EXECUTION

STANDARDS AND PERFORMANCE:

Watertight and airtight installation of each glass product is required, except as otherwise shown. Each installation must withstand normal temperature changes, wind loading, impact loading (for operating sash and doors), without failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the work.

Protect glass from edge damage during handling and installation, and subsequent operation of glazed components of the work. During installation, discard units with significant edge damage or other imperfections.

Glazing channel dimensions as shown are intended to provide for necessary bite on glass, minimum edge clearance, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by job conditions at time of installation.

Comply with combined recommendations and technical reports by manufacturers of glass and glazing products as used in each glazing channel, and with recommendations of Flat Glass Marketing Association "Glazing Manual", except where more stringent requirements are indicated.

PREPARATION FOR GLAZING:

Clean glazing channel and other framing members immediately before glazing. Remove coatings which are not firmly bonded to substrate. Remove lacquer from metal surfaces where elastomeric sealants are used.

Apply primer or sealant to joint surfaces where recommended by sealant manufacturer.

GLAZING:

Install setting blocks of proper size in sill rabbet, located 1/4th of glass width from each corner. Set blocks in thin course of hell bead compound, if any.

Provide spacers inside and out, of proper size and spacing, for glass sizes larger than 50 united inches, except where gaskets or pre-shimmed tapes are used for glazing. Provide 1/8" minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.

Set units of glass in each series with uniformity of pattern, draw, bow and similar characteristics.

VOIDS and Filler Rods: Prevent exudation of sealant or compound by forming voids or installing filler rods in channel at heel of jambs and head (do not leave voids in still channels), except as otherwise indicated and depending on light size, thickness and type of glass, and complying with manufacturer's recommendations.

Force sealants into channels to eliminate voids and to ensure complete "wetting" or bond of sealant to glass and channel surfaces.

Tool exposed surfaces of glazing liquids and compounds to provide a substantial "wash" away from glass. Install pressurized tapes and gaskets to protrude slightly out of channel, so as to eliminate dirt and moisture pockets.

Clean and trim excess glazing materials from glass and stops or frames promptly after installation and eliminate stains and discolorations.

Where wedge shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when installation is subjected to movement. Anchor gasket to stop with matching ribs, or by proven adhesives, including embedment of gasket tail in cured heel bead.

Gasket Glazing: Miter out and bond ends together at corners where gaskets are used for channel glazing, so that gaskets will not pull away from corners and result in voids or leaks in glazing system.

Structural Gasket Glazing: Cut zipper strips slightly long, to ensure tight closure. Lubricate zipper strip and use special tool to install zipper. Do not lubricate glazing channel or anchorage rabbet. Comply with details as shown and manufacturer's instructions, including the possible use of liquid sealants and weep holes.

CURE PROTECTION AND CLEANING:

Protect exterior glass from breakage immediately upon installation by use of crossed streamers attached to framing and held away from glass. Do not apply markers to surfaces of glass. Remove non-permanent labels and clean surfaces. Cure sealants for high early strength and durability.

Remove and replace glass which is broken, chipped, cracked, abraded or damaged in other ways during construction period, including natural causes, accidents and vandalism.

Wash and polish glass on both faces not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Comply with glass product manufacturer's recommendations for final cleaning.

END OF SECTION 08800

SECTION 08871 - SAFETY AND SECURITY WINDOW FILM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Safety and security window film.
- B. Film attachment systems.

1.2 RELATED SECTIONS

- A. Section 08800 - Glass Glazing.

1.3 REFERENCES

- A. ASHRAE - American Society for Heating, Refrigeration, and Air Conditioning Engineers; Handbook of Fundamentals.
- B. ASTM International (ASTM):
 1. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
 2. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
 3. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
 4. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
 5. ASTM D1044 - Standard Method of Test for Resistance of Transparent Plastics to Surface Abrasion (Taber Abrader Test).
 6. ASTM D2240 - Standard Method for Rubber Property - Durometer Hardness.
 7. ASTM D2582 - Standard Test Method for Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting.
 8. ASTM D5895 - Standard Test Methods for Evaluating Drying or Curing During Film Formation of Organic Coatings Using Mechanical Recorders.
 9. ASTM D4830 - Standard Test Methods for Characterizing Thermoplastic Fabrics Used in Roofing and Waterproofing.
 10. ASTM E84 - Standard Method of Test for Surface Burning Characteristics of Building Materials.
 11. ASTM E903 - Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres.
 12. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

13. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
 14. ASTM F1642 - Standard Method of Test for Glazing and Glazing Systems Subject to Airblast Loadings.
 15. ASTM F2912 - Standard Specification for Glazing and Glazing Systems Subject to Airblast Loadings.
- C. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
 - D. Consumer Products Safety Commission 16 CFR, Part 1201 - Safety Standard for Architectural Glazing Materials.
 - E. GSA-TS01-2003 -- Standard Test for Glazing and Glazing Systems Subject to Airblast Loadings.
 - F. ISO 16933, International Standard for Glass in Building: Explosion-resistant security glazing - Test and classification for arena air-blast testing.
 - G. Underwriters Laboratories Inc. (UL): UL 972 - Burglary Resisting Glazing Material.

1.4 PERFORMANCE REQUIREMENTS

- A. Safety Glazing Impact Performance:
 1. 400 ft-lbs impact resistance, meeting 16 CFR 1201 (Category 2) impact requirements with film applied on 1/4 inch annealed glass.
- B. Blast Hazard Mitigation Performance:
 1. GSA Rating of "2"/ ASTM F1642 "No Hazard" with minimum blast load of 9 psi and 63 psi*msec, on 1/4" single pane glass and film attachment system.
 2. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with minimum blast load of 10 psi and 89 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
 3. GSA Rating of "2" with minimum blast load of 12 psi and 66 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
- C. Impact Resistance and Pressure Cycling:
 1. ASTM E1996 / E1886: Small Missile "A", +/- 80 psf Design Pressure.
 2. ASTM E1996 / E1886: Large Missile "C", +/- 75 psf Design Pressure
- D. Tear Resistance:
 1. Minimum Graves Area Tear Strength of 1,200 lbs% as measured on coated film product, without liner, per ASTM D1004.

- E. Adhesion to Glass:
 1. Minimum 8 lbs/in peel strength per ASTM D3330 (Method A).

- F. Flammability: Surface burning characteristics when tested in accordance ASTM E 84, demonstrating film applied to glass rated Class A for Interior Use:
 1. Flame Spread Index: no greater than 25.
 2. Smoke Developed Index: no greater than 55.

- G. Abrasion Resistance:
 1. Film shall have a surface coating that is resistant to abrasion such that less than 5 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
 2. Film shall have a surface coating that is resistant to abrasion such that a nominal 5 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.

- H. UV Light Rejection:
 1. Minimum of 99.9% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300 - Administrative Requirements.

- B. Product Data: Manufacturer's current technical literature on each product to be used, including:
 1. Manufacturer's Data Sheets.
 2. Preparation instructions and recommendations.
 3. Storage and handling requirements and recommendations.
 4. Installation methods.

- C. 3rd Party Test Report Submittal Requirements. Submit the following 3rd Party test reports indicating compliance with the test values listed in this section.
 1. Flammability Testing, ASTM E84.
 2. Film Properties Testing, ASTM D882.
 3. Abrasion Resistance Testing, ASTM D1044.
 4. Peel Strength Testing, ASTM D3330.
 5. Tear Resistance Testing, ASTM D1004.
 6. Puncture Strength Testing, ASTM D4830.
 7. Safety Glazing Impact Testing, ANSI Z97.1 and/or 16 CFR 1201.
 8. Flammability Testing, ASTM E84.
 9. Burglary Resistance Glazing, UL 972
 10. Impact Resistance and Pressure Cycling, ASTMs E1886 and E1996.
 11. Blast Hazard Mitigation Testing, ASTM F1642 / F2912 and/or GSA-TS01-2003.

- D. Other Product Submittals:
 - 1. Manufacturer's summary of 3rd Party Blast Hazard Mitigation Testing, ASTM F1642 / F2912 and/or GSA-TS01-2003
 - 2. 3rd Party test reports from Forced Entry Resistance evaluations.
- E. Verification Samples: For each film specified, two samples representing actual film color and pattern.
- F. Performance Submittals: Provide laboratory data of emissivity and calculated window U-Factors for various outdoor temperatures based upon established calculation procedure defined by the ASHRAE Handbook of Fundamentals, Chapter 29, or Lawrence Berkeley Laboratory Window 5.2 Computer Program.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years' experience.
 - 1. Provide documentation that the adhesive used on the specified film is a Pressure Sensitive Adhesive (PSA).
- B. Installer Qualifications: All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.
 - 1. Provide documentation that the installer is authorized by the Manufacturer to perform Work specified in this section.
 - 2. Provide a commercial building reference list of 5 properties where the installer has applied window film. This list will include the following information:
 - a. Name of building.
 - b. The name and telephone number of a management contact.
 - c. Type of glass.
 - d. Type of film and/or film attachment system.
 - e. Amount of film and/or film attachment system installed.
 - f. Date of completion.
 - 3. Provide a Glass Stress Analysis of the existing glass and proposed glass/film combination as recommended by the film manufacturer.
 - 4. Provide an EFilm application analysis to determine available energy cost reduction and savings.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Follow Manufacturer's instructions for storage and handling.
- B. Store products in manufacturer's unopened packaging until ready for installation.
- C. Store and dispose of any hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.9 WARRANTY

- A. At project closeout, provide to Owner's Representative an executed current copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.
- B. In order to validate warranty, installation must be performed by an Authorized 3M dealer. Verification of Authorized 3M dealer can be confirmed by submission of active 3M dealer code number.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: 3M Commercial Solutions, which is located at: 3M Center Bldg. 220-12-E-04; St. Paul, MN 55144-1000; Toll Free Tel: 888-650-3497; Tel: 651-737-1081; Fax: 651 737 8241.
- B. Substitutions: Submit requests with documentation prior to bidding. No substitutions will be considered after project award.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600 - Product Requirements.

2.2 CLEAR MICROLAYERED SAFETY AND SECURITY WINDOW FILM

- A. 3M Scotchshield Ultra S800 Safety and Security Window Film. Optically clear microlayered polyester film, nominally 6 mils (0.006 inch) thick, with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive on the other. The film is clear and does not contain dyed polyester. The adhesive is pressure-activated, not water-activated, and forms a physical bond, not chemical bond, to the glass. The film is microlayered with both plastic and ductile polyester layers for tear resistance.
 - 1. Physical / Mechanical Performance Properties:

- a. Film Color: Clear.
- b. Thickness: Nominal 8 mils
- c. Tensile Strength (ASTM D 882): 32,000 psi.
- d. Break Strength (ASTM D 882) (Per Inch Width): 250 lbs.
2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding, or other optical defects.
3. Variation in Total Transmission across the Width: Less than 2 percent over the average at any portion along the length.
4. Identification: Labeled as to Manufacturer as listed in this Section.
5. Solar Performance Properties: Film applied to 1/4 Inch (6 mm) thick clear glass.
 - a. Visible Light Transmission (ASTM E 903): 87 percent.
 - b. Ultraviolet Transmission (ASTM E 903): Less than 0.5 percent.
6. Impact Resistance for Safety Glazing: Tested on 1/4 inch (6 mm) annealed glass.
 - a. Safety Rating (CPSC 16 CFR, Part 1201): Category II (400 ft.-lbs).
7. Impact Resistance and Pressure Cycling:
 - a. Film shall pass impact of Medium-Large Missile "C" and withstand subsequent pressure cycling (per ASTMs E 1996 and E 1886) at +/- 75 psf Design Pressure with use of 3M Impact Protection Adhesive attachment system.
8. Blast Hazard Mitigation: Independent testing with results from high explosive arena blast testing.
 - a. GSA Rating of "2" with minimum blast load of 7 psi and 43 psi*msec, on 1/4-inch single pane annealed glass and 3M Impact Protection Profile film attachment system.
9. Forced Entry Protection: Independent lab testing according to UL 972 protocol (Multiple Impact Test).
 - a. Annealed Glass (1/4 inch) - Pass
 - b. Tempered Glass (1/4 inch) - Pass

2.3 3M IMPACT PROTECTION FILM ATTACHMENT SYSTEMS

- A. 3M Impact Protection Adhesive (IPA): Weatherable, UV-resistant, moisture curable structural sealant wet glaze.
 1. Color:
 - a. Black.
 2. Material Properties (as supplied):
 - a. Typical Cure Time: 3 - 7 days (25 degrees C, 50% RH)
 - b. Full Adhesion: 7 - 14 days
 - c. Tack-Free Time (ASTM D 5895): 21 minutes (25 degrees C, 50% RH)
 - d. Flow, Sag or Slump (ASTM D 2202): 0 inches
 - e. Specific Gravity: 1.4
 - f. Working Time: 10 - 20 minutes (25 degrees C, 50% RH)
 - g. VOC Content: 16 g/L
 3. Material Properties (as cured - 21 days at 25 degrees C, 50% RH):
 - a. Ultimate Tensile Strength (ASTM D412): 380 psi (2.62 MPa)
 - b. Ultimate Elongation (ASTM D412): 640 psi
 - c. Durometer Hardness, Shore A (ASTM D2240): 38-39 points

- d. Tear Strength, Die B (ASTM D624): 72 ppi
4. Uniformity: Product shall have uniform consistency and appearance, with no clumping.
5. Impact Resistance and Pressure Cycling:
 - a. As part of a filmed glass system, film attachment shall demonstrate ability to withstand Medium Large Missile C and Small Missile A impact, with subsequent pressure cycling (per ASTMs E 1996 and E 1886) at +/- 75 psf design pressure.
 - b. As part of a filmed glass system, film attachment shall demonstrate ability withstand structural load requirements of ASTM E330 when tested at +/- 100 psf design pressure.
6. Blast Hazard Mitigation:
 - a. GSA level "2" rating (minimal hazard) of "2" with minimum blast load of 11 psi overpressure and 55 psi*msec blast impulse.
 - b. GSA level "3B" rating (low hazard) with minimum blast load of 10 psi overpressure and 89 psi*msec blast impulse.
 - c. ASTM F1642 rating of "Low Hazard" with minimum blast load of 8 psi overpressure and 42 psi*msec blast impulse.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Film Examination:
 1. If preparation of glass surfaces is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
 2. Glass surfaces receiving new film should first be examined to verify that they are free from defects and imperfections, which will affect the final appearance.
 3. Do not proceed with installation until glass surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
 4. Commencement of installation constitutes acceptance of conditions.
- B. Impact Protection Adhesive Examination:
 1. If application of window film is/was the responsibility of another installer, notification in writing shall be made of deviations from manufacturer's recommended installation tolerances and conditions.
 2. Filmed glass surfaces receiving new attachment should first be examined to verify that they are free from defects and imperfections, and that the film edges extend sufficiently to the frame edges.
 3. Do not proceed with installation until film and frame surfaces have been properly prepared and deviations from

manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.

4. Conduct an adhesion test to the frame surface may be conducted by applying a 4 - 6-inch-long bead, approximately 0.5 – 1 inch in width, masking one side of the frame surface underneath the strip with tape. Allow the Impact Protection Adhesive to cure for 7 days and test adhesion by pulling up on the masked end and a 90-degree angle. If cohesive failure is observed (adhesive residue left behind on the frame surface), adhesion is acceptable; if adhesive failure is observed (clean peel from the frame), adhesion is unacceptable, and product is not recommended.

C. Impact Protection Profile Examination:

1. If application of window film is/was the responsibility of another installer, notification in writing shall be made of deviations from manufacturer's recommended installation tolerances and conditions.
2. Windows and frames must be examined to ensure that they are fit to receive the Impact Protection Profile in a manner such that the two profile adhesive strips will be perpendicularly opposed to each other and that they will not contact glazing stops or frame gaskets without stretching the profile.
3. Filmed glass surfaces receiving new attachment should first be examined to verify that they are free from defects and imperfections, and that the film edges extend sufficiently to the frame edges.
4. Do not proceed with installation until film and frame surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
5. Conduct an adhesion test to the frame surface may be conducted by applying a 4 - 6-inch-long strip on the frame surface, using sufficient pressure to achieve good adhesive wet-out. Allow the Impact Protection Profile to cure for 1-2 days and test adhesion by removing the test strip. If cohesive failure is observed (adhesive residue left behind on the frame surface), adhesion is acceptable; if adhesive failure is observed (clean peel from the frame), adhesion is unacceptable and product is either not recommended, or an adhesion promoter, such as 3M Primer 94, must be used.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

- C. Refer to Manufacturer's installation instructions for methods of preparation for Impact Protection Adhesive or Impact Protection Profile film attachment systems.

3.3 INSTALLATION

- A. Film Installation:
 - 1. Install in accordance with manufacturer's instructions.
 - 2. Cut film edges neatly and square at a uniform distance of 1/8 inch (3 mm) to 1/16 inch (1.5 mm) of window sealant. Use new blade tips after 3 to 4 cuts.
 - 3. Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
 - 4. Apply film to glass and lightly spray film with slip solution.
 - 5. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
 - 6. Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
 - 7. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

- B. Impact Protection Adhesive Installation:
 - 1. The film attachment system shall be applied according to the specifications of the Manufacturer by an Authorized Dealer/Applicator. Refer to 3M publication, 70-0709-0322-7, 3M Impact Protection Adhesive Attachment System Installation Instructions.
 - a. For blast hazard mitigation: minimum 1/2-inch bead overlap on both frame and film (excluding glazing stops or compression gaskets).
 - b. For impact resistance and building envelope protection: minimum 3/8-inch bead overlap on both frame and film (excluding glazing stops or compression gaskets).
 - 2. To ensure a straight and consistent bead width is achieved, masking tape

- may be applied to film and frame surfaces prior to application.
3. With prior approval of the building owner or property manager, existing compression gaskets may be partially removed or trimmed to allow for a thinner bead and stronger anchorage. If removing the gaskets, sections shall be trimmed approximately 3 inches in length and inserted with appropriate spacing along all sides of the window to help secure the glazing during application and curing of the Impact Protection Adhesive.
 4. The Impact Protection Adhesive shall be dispensed with a caulk gun with nozzle opening diameter sized to match the approximate size of the desired bead width.
 5. A plastic putty knife or other tool with a clean straight edge shall be used to trowel and smooth out the adhesive. The completed adhesive bead shall be relatively triangular in shape.
 6. Any masking tape used shall be carefully removed within 10 minutes after applying the wet glaze.
- C. Impact Protection Profile Installation:
1. The film attachment system shall be applied according to the specifications of the Manufacturer by an Authorized Dealer/Applicator trained to install 3M Impact Protection Profile. Refer to 3M publication, 3M Impact Protection Profile Installation Systems Instructions.
 2. Each profile piece must span continuously to both sides of the window, within 1/8 inch to the frame edge. Splicing the profile between frame edges is prohibited.
 3. Profile must be aligned and applied by 3M recommended or approved methods and tools to ensure a quality installation.
 4. Corner joints must be fabricated by 3M recommended and approved methods. No part of the profile adhesive shall make contact with an adjacent profile.
 5. Sufficient pressure must be evenly applied along the entire length of the profile to ensure full adhesion from both adhesive strips. A roller tool is required to minimize entrapment of air in the adhesive.

3.4 CLEANING AND PROTECTION

- A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.

END OF SECTION

SECTION 09900 PAINTING

PART 1 GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work in this section.

DESCRIPTION OF WORK:

Extent of painting work is indicated on drawings and schedules, and as herein specified.

Work includes painting and finishing of interior and exterior exposed items and surfaces throughout Project, except as otherwise indicated.

Surface preparation, priming and coats or paint specified are in addition to shop priming and surface treatment specified under other sections of work.

"Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.

Pre Finished Items: Unless otherwise indicated, do not include painting when factory finishing or installer finishing is specified for such items as (but not limited to) metal toilet enclosures, pre-finished partition systems, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment, including light fixtures, switchgear and distribution cabinets, elevator entrance frames, doors and equipment.

Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.

Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.

Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts will not require finish painting.

Do not paint over any code required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

SUBMITTALS:

Product Data: Submit manufacturer's technical information including Paint label analysis

and application instructions for each material proposed for use.

Samples: Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

On 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.

On actual wood surfaces, provide two 4" x 8" samples of natural and stained wood finish. Label and identify each as to location and application.

On concrete masonry, provide two 4" square samples of masonry for each type of finish and color, defining filler, prime and finish coat.

DELIVERY AND STORAGE:

Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

Name or title of material.

Fed. Spec. number, if applicable.

Manufacturer's stock number and date of manufacture.

Manufacturer's name.

Contents by volume, for major pigment and vehicle constituents.

Thinning instructions.

Application instructions.

Color name and number.

JOB CONDITIONS:

Apply water base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Apply solvent thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted by paint manufacturer's printed instructions.

Do not paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

PART 2 PRODUCTS

COLORS AND FINISHES:

Paint colors, surface treatments, and finishes, are indicated in "schedules" of the contract documents.

Prior to beginning work, Architect will furnish color chips for surfaces to be painted.

Use representative colors when preparing samples for review.

MANUFACTURERS: for interior paint system only;

Sherwin Williams
Technical Coatings Inc.
Jones Blair
Pittsburgh Paint

For exterior paint system:

Tnemec (no substitutes for this product)

Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

MATERIALS:

Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best grade product will not be acceptable.

EXTERIOR PAINT SYSTEMS (EPS):

Provide following paint systems for various substrates, as indicated.

Exposed Metal:

First Coat	Kem Kromik Universal Primer @ 2.0-5.0 mils dft.
Second Coat	Corothane II @ 2.0-4.0 Milfs dft.
Third Coat	Corothane II @ 2.0-4.0 Milfs dft.

INTERIOR PAINT SYSTEMS:

Provide following paint systems for various substrates, as indicated.

Exposed Metal:

IPS2: 1st Coat - PROMAR Interior Latex Primer
2nd Coat - PROMAR 200 Interior Latex Semi-Gloss
3rd Coat - PROMAR 200 Interior Latex Semi-Gloss

PART 3 EXECUTION

INSPECTION:

Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been correct in a manner acceptable to Applicator.

Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

SURFACE PREPARATION:

General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish painted or provide surface applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

Clean surfaces to be painted before applying paint or surface treatments. Remove rust, oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly painted surfaces.

Cementitious Materials: Prepare cementitious surfaces of concrete, concrete block to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze as required. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

Clean concrete floor surfaces scheduled to be painted with a commercial solution or muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid and allow to dry before painting.

Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dried.

Prime, stain, or seal wood required to be job painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling. When transparent finish is required, use spar varnish for back-priming.

Back-prime paneling on interior partitions only where masonry or other wet wall construction occurs on backside.

Seal tops, bottoms, and cut outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

Ferrous Metals: Clean ferrous surfaces, which are not galvanized, or shop coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

Touch up shop applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch up with same type shop primer.

Galvanized Surfaces: Clean free of oil and surface contaminants with nonpetroleum based solvent.

MATERIALS PREPARATION:

Mix and prepare painting materials in accordance with manufacturer's directions.

Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue. Store materials not in actual use in tightly covered containers.

Stir materials before application to produce a mixture of uniform density and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

APPLICATION:

General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.

Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated. Sand lightly between each succeeding enamel or varnish coat.

Omit first coat (primer) on metal surfaces which have been shop primed and touch up painted, unless otherwise indicated.

Scheduling Painting: Apply first coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.

Prime Coats: Apply prime coat of material, which is required to be painted or finished, and which has not been prime coated by others.

Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn through or other defects due to insufficient sealing.

Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.

Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

Transparent (Clear) Finish: Use multiple coats to produce glass smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats, unless otherwise indicated.

Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

FIELD QUALITY CONTROL:

The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:

Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.

Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.

If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove noncomplying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non compatible.

CLEAN UP AND PROTECTION:

Clean Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each workday. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after

completion of painting operations. At completion of work of other trades, touch up and restore all damaged or defaced painted surfaces.

END OF SECTION 09900

SECTION 10440 SPECIALTY LETTERS

PART 1 GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work specified in this section.

DESCRIPTION OF WORK:

Extent of specialty letters is shown on drawings.

Forms of specialty letters required include the following:

Reflective letters

QUALITY ASSURANCE:

Uniformity of Manufacturer: For each letter form and graphic image process indicated, furnish products of a single manufacturer.

SUBMITTALS:

Product Data: Submit manufacturer's technical data and installation instructions for each type of letter required.

Samples: Submit samples of each letter form and material showing finishes, colors, surface textures and qualities of manufacture of each letter component, including graphics.

Shop Drawings: Submit shop drawings for fabrication and erection of specialty letters. Include plans, elevations, and large-scale details of letter wording and lettering layout. Show anchorages and accessory items. Furnish location template drawings for items supported or anchored to permanent construction.

Furnish full size rubbings for metal plaques.

PART 2 PRODUCTS

ACCEPTABLE MANUFACTURERS:

Panel Letterage

Manufacturers of Door Letters:

Basis of Deletter: 3M 3400 Sheeting

MATERIALS:

MAILBOX NUMBERS:

Provide (2) – 9" tall reflective numbers to be applied at each exterior access door, refer to Sheet A3.01 for locations.

FINISHES:

General:

Colors and Surface Textures: For exposed letter materials which require selection of materials with integral or applied colors, surface textures or other characteristics related to appearance, provide color matches indicated, or if not otherwise indicated, as selected by the Architect from the manufacturer's standards.

PART 3 EXECUTION:

INSTALLATION:

General: Locate letter units and accessories where shown or scheduled, using mounting methods of type described and in compliance with the manufacturer's instructions, unless otherwise indicated.

Install letter units level, plumb and at the height indicated, with letter surfaces free from distortion or other defects of appearance.

CLEANING AND PROTECTION:

At completion of the installation, clean soiled letter surface in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

END OF SECTION 10440

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RIO GRANDE VALLEY, TEXAS

October 24, 2023

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DIVISION 28: SAFETY AND SECURITY

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284211 Vape and Alarm Control System (Performance Spec) Alt.

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10-24-2023

SECTION 271513 - STRUCTURED CABLING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Category 3 twisted pair cable.
2. Category 5e twisted pair cable.
3. Category 6 twisted pair cable.
4. Category 6a twisted pair cable.
5. Twisted pair cable hardware, including plugs and jacks.
6. Fiber Cabling, hardware, and components.
7. Multiuser telecommunications outlet assembly.
8. Cable management system.
9. Cabling identification products.
10. Grounding provisions for twisted pair cable.
11. Source quality control requirements for twisted pair cable.

1.2 DEFINITIONS

- A. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.
- B. EMI: Electromagnetic interference.
- C. FTP: Shielded twisted pair.
- D. F/FTP: Overall foil screened cable with foil screened twisted pair.
- E. F/UTP: Overall foil screened cable with unscreened twisted pair.
- F. IDC: Insulation displacement connector.
- G. LAN: Local area network.
- H. Jack: Also commonly called an "outlet," it is the fixed, female connector.
- I. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.
- J. RCDD: Registered Communications Distribution Designer.
- K. Screen: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- L. Shield: A metallic layer, either a foil or braid, placed around a pair or group of conductors.
- M. S/FTP: Overall braid screened cable with foil screened twisted pair.
- N. S/UTP: Overall braid screened cable with unscreened twisted pairs.

SECTION 271513 - STRUCTURED CABLING SYSTEMS

- O. UTP: Unscreened (unshielded) twisted pair.

1.3 COPPER HORIZONTAL CABLING DESCRIPTION

- A. Horizontal cable cabling system shall provide interconnections between Distributor A, Distributor B, or Distributor C, and the equipment outlet, otherwise known as "Cabling Subsystem 1," in the telecommunications cabling system structure. Cabling system consists of horizontal cables, intermediate and main cross-connects, mechanical terminations, and patch cords or jumpers used for horizontal-to-horizontal cross-connection.
 - 1. TIA-568-C.1 requires that a minimum of two equipment outlets be installed for each work area.
 - 2. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications equipment outlet.
 - 3. Bridged taps and splices shall not be installed in the horizontal cabling.
- B. A work area is approximately 100 sq. ft., and includes the components that extend from the equipment outlets to the station equipment.
- C. The maximum allowable horizontal cable length is 295 feet. This maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment or in the horizontal cross-connect.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Reviewed and stamped by RCDD.
 - 1. System Labeling Schedules:
 - a. Electronic copy of labeling schedules, in software and format selected by Owner.
 - 2. Cabling administration Drawings and printouts.
 - 3. Wiring diagrams and installation details of telecommunications equipment, to show location and layout of telecommunications equipment, including the following:
 - a. Telecommunications rooms plans and elevations.
 - b. Telecommunications pathways.
 - c. Telecommunications system access points.
 - d. Telecommunications grounding system.
 - e. Telecommunications conductor drop locations.
 - f. Typical telecommunications details.
 - g. Mechanical, electrical, and plumbing systems.
- C. Twisted pair cable testing plan.
- D. Samples: For telecommunications jacks and plugs, in specified finish, one for each type and con-figuration.
- E. Field Quality-Control Submittals:
 - 1. Field quality-control reports.

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1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer installation supervisor, and field inspector.
- B. Product Certificates: For each type of product.
- C. Source quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For splices and connectors to include in maintenance manuals.
- B. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or compact disk, complete with data files.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.
 - 1. Layout Responsibility: Preparation of Shop Drawings and cabling administration Drawings, cabling administration Drawings, and field testing program development by an RCDD.
 - 2. Installation Supervision: Installation shall be under the direct supervision of Level 2 Installer, who shall be present at all times when Work of this Section is performed at Project site.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
 - 1. Test each pair of twisted pair cable for open and short circuits.

1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.10 COORDINATION

- A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

SECTION 271513 - STRUCTURED CABLING SYSTEMS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA- 568-C.1, when tested according to test procedures of this standard.
- B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.
- C. Grounding: Comply with TIA-607-B.

2.2 GENERAL CABLE CHARACTERISTICS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
 - 1. Communications, Plenum Rated:
 - a. Type CMP complying with UL 1685 or Type CMP in listed plenum communications raceway.
 - b. Type CM, Type CMG, Type CMP, Type CMR, or Type CMX in metallic conduit installed according to NFPA 70, Article 300.22, "Wiring in Ducts, Plenums, and Other Air-Handling Spaces."
 - 2. Communications, Non-Plenum Rated:
 - a. Type CMR complying with UL 1666 and ICEA S-103-701.
- B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 50 or less.
- C. RoHS compliant.
- D. Cable Color Schemes
 - 1. Color scheme for cable runs and patch cables are indicated below.
 - 2. The color code shall be as follows:

Purpose	Color
Data (wall jacks)	Blue
Wireless Access Points	Green
Projectors	Purple
Analog (security/fire/elevator x-connect)	Orange
Security Cameras	Yellow
Intercom	White

2.3 CATEGORY 6 TWISTED PAIR CABLE

- A. Description: Four-pair, balanced-twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6 cable at frequencies up to 250 MHz.

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- B. CommScope Uniprise, UN874018605/10 | CS34P
- C. Standard: Comply with NEMA WC 66/ICEA S-116-732 and TIA-568-C.2 for Category 6 cables.
- D. Conductors: 100-ohm, 23 AWG solid copper.
- E. Shielding/Screening: Unshielded twisted pairs (UTP), Shielded twisted pairs (FTP).
- F. Cable Rating: Plenum.
- G. Jacket: Color per owner Standards.

2.4 CATEGORY 6a TWISTED PAIR CABLE

- A. Description: Four-pair, balanced-twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6a cable at frequencies up to 500 MHz.
- B. CommScope Uniprise, UN874015814/10 | CS44P
- C. Standard: Comply with TIA-568-C.2 for Category 6a cables.
- D. Conductors: 100-ohm, 23 AWG solid copper.
- E. Shielding/Screening: Unshielded twisted pairs (UTP), Shielded twisted pairs (FTP).
- F. Cable Rating: Plenum.
- G. Jacket: Color per owner Standards.

2.5 TWISTED PAIR CABLE HARDWARE

- A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.
- B. Commscope, Hubbell, Mohawk, Panduit
- C. General Requirements for Twisted Pair Cable Hardware:
 - 1. Comply with the performance requirements of Category 5e, Category 6, Category 6a.
 - 2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
 - 3. Cables shall be terminated with connecting hardware of same category or higher.
- D. Source Limitations: Obtain twisted pair cable hardware from same manufacturer as twisted pair cable, from single source.
- E. Connecting Blocks:
 - 1. 110-style IDC for Category 6.
 - 2. Provide blocks for the number of cables terminated on the block, plus 25 percent spare, integral with connector bodies, including plugs and jacks where indicated.

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3. Number of Terminals per Field: One for each conductor in assigned cables.
4. Each horizontal or backbone cabling run will be terminated using appropriate connectors or connecting blocks depending upon the cable type. Matching patch cords will be used to perform cross-connect activities or to connect into the networking/voice hardware.
5. U/UTP Modular Patch Panel
 - a. The modular patch panel must be capable of housing M-Series outlets.
 - b. The discrete distribution module (DDM) panels should be available in a 24- or 48-port, straight configuration.
 - c. The panel should consist of a rack mounted base unit, rear cable management hardware, and labels for port numbering.
 - d. Panel should mount in a 19-inch (483mm) equipment rack with universal hole spacing.
 - e. The modular patch panel will be installed above and below switches. 24-port patch panels shall be installed above the top switch and below the bottom switch in each rack. 48-port patch panels shall be installed between switches in each rack.
 - 1) CommScope CPP-UDDM-2U-48 Patch Panel, 48 port
 - 2) CommScope CPP-UDDM-1U-24 Patch Panel, 24 port
6. Outlets installed in the Modular Patch Panel will be color-coded to match application, workstation drop, and patch cord as follows-
 - a. CommScope Uniprise- UNJ600-BL (for all Data Drops)
 - b. CommScope Uniprise- UNJ600-VL (for all Projectors)
 - c. CommScope Uniprise- UNJ600-OR (for all Analog)
 - d. CommScope Uniprise- UNJ600-YL (for all Security Cameras)
 - e. CommScope Uniprise- UNJ600-262 White (for all intercom)
 - f. CommScope Uniprise- UNJ10G-GN (for all WAP Drops)
7. Patch Cords
 - a. All category 6 Patch (Work-area) Cords shall use 4-pair balanced twisted-pair category 6 23 AWG stranded twisted pair copper cable and be available in both Booted and Non-Booted options.
 - b. For work area data drops, we require the following length and quantity of patch cords.
 - c. Twenty-Five (25) CAT 6 work area patch cord, 1 foot in length and Blue in color shall be provided. UC1BBB2-0ZF001
 - d. Fifty (50) CAT 6 work area patch cord, 10 feet in length and Blue in color shall be provided. UC1BBB2-0ZF010
 - e. Ten (10) CAT 6 work area patch cord, 15 feet in length and Blue in color shall be provided. UC1BBB2-0ZF015
 - f. Five (5) CAT 6 work area patch cord, 25 feet in length and Blue in color shall be provided. UC1BBB2-0ZF025
 - g. Two (2) CAT 6 work area patch cord, 50 feet in length and Blue in color shall be provided. UC1BBB2-0ZF050

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- h. For Projector Drops, provide one Purple category 6 10' patch cord per drop. UC1BBB2-0LF010
- i. For Analog Drops, provide one Orange category 6 10' patch cord per drop. UC1BBB2-06F010
- j. For Security Camera Drops, provide one Yellow category 6 10' patch cord per drop. UC1BBB2-09F010
- k. For Intercom Drops, provide one White category 6 10' patch cord per drop. UC1BBB2-08F010
- l. For WAP Drops, provide one Green category 6a 10' patch cord per drop. UC1BBB2-0MF010
- m. Patch cords shall be from the same manufacturer as the horizontal cabling to insure optimum performance.

F. Legend:

- 1. Machine printed, in the field, using adhesive-tape label.
- 2. Snap-in, clear-label covers and machine-printed paper inserts.

2.6 CABLE MANAGEMENT SYSTEM

- A. Description: Computer-based cable management system, with integrated database and graphic capabilities.
- B. iTRACS Corporation, Telsolt Solutions
- C. Document physical characteristics by recording the network, TIA details, and connections between equipment and cable.
- D. Information shall be presented in database view, schematic plans.
 - 1. AutoCAD drawing software shall be used as drawing and schematic plans software.
- E. System shall interface with the following testing and recording devices:
 - 1. Direct upload tests from circuit testing instrument into the personal computer.
 - 2. Direct download circuit labeling into labeling printer.

2.7 IDENTIFICATION PRODUCTS

- A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.8 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to evaluate cables.
- B. Factory test cables on reels according to TIA-568-C.1.
- C. Factory test twisted pair cables according to TIA-568-C.2.
- D. Cable will be considered defective if it does not pass tests and inspections.

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- E. Prepare test and inspection reports.

2.9 FIBER CABLING - BACKBONE-FIBER

- A. The Backbone Fiber Riser System shall consist of fiber cables with 12 (twelve) 50-um OM4 multi-mode interlocking armor cable placed from the each IDF and terminating in the MDF, as shown on the drawings.
- B. Sharp edges of interlocking armor will be terminated with MC-type connector and attached to Rack mount bracket or to Fiber shelf.
- C. Interlocking armor will be bonded to ground per manufacturer's instructions.
- D. All fiber terminations shall be fusion spliced pigtailed with LC connectors.
- E. Fiber will be terminated and routed through rack mount fiber panels.
- F. 2 duplex 7' LC OM4 riser-rated patch cords will be provided for each closet.
- G. Fiber Optic Backbone Cable shall be rated OFNP or OFNR per the installation environment as defined by the NEC and local authority having jurisdiction.
- H. Multi-mode:
 - 1. Fiber construction shall be multi-mode with a core/cladding size of 50/125 microns. Contractor shall purchase and install the appropriate CommScope fan out and breakout materials where dictated by the application and choice of fiber optic cable type. The maximum attenuation of the cable shall be 3.0 dB/km at 850nm and 1.0 dB/km at 1300nm. The cable shall be capable of supporting 10 Gigabit Ethernet to 550 meters.
- I. Fiber Optic Cable size shall contain 12 fibers, and termination shall be as per the backbone diagram, or Customer requirements. All Fiber Optical Cable shall be constructed to the requirements listed in Fiber Cable Specifications.
- J. All fiber links shall be tested for attenuation using a power meter and light source. The allowable attenuation for any link shall be calculated using the CommScope link loss calculator.
- K. All testing shall be accomplished according to Section 11 of ANSI/TIA/EIA-568.1-D
 - 1. CommScope 50 micron LazrSPEED 550 Multimode fiber cable P-012-DZ-5K-FSUAQ
 - 2. CommScope Powered fiber cable, OS2, 4 Fibers, Outdoor, 12AWG conductor (printed per foot) –PFC-S04O12F [Provide all POE extenders, connectors, power express modules, Slimline SPS DC Rectifier, and other items for complete system]
- L. Fiber Optic Backbone Cable shall be rated OFNP or OFNR per the installation environment as defined by the NEC and local authority having jurisdiction.
 - 1. Multi-Mode
 - a. Fiber construction shall be multi-mode with a core/cladding size of 50/125 microns. Contractor shall purchase and install the appropriate CommScope fan out and breakout materials where dictated by the application and choice of

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fiber optic cable type. The maximum attenuation of the cable shall be 3.0 dB/km at 850nm and 1.0 dB/km at 1300nm. The cable shall be capable of supporting 10 Gigabit Ethernet to 300 meters.

- b. When tested in accordance with FOTP-3, "Procedure to Measure Temperature Cycling Effects on Optical Fibers, Optical Cable, and Other Passive Fiber Optic Components," the average change in attenuation over the rated temperature range of the optical fiber cable shall not exceed 0.05 dB/km at 1550 nm. The magnitude of the maximum attenuation change of each individual optical fiber shall not be greater than 0.15 dB/km at 1550 nm

M. Fiber Cable Specifications

N. This optical fiber backbone cable shall be suitable for installation in building riser systems, in conduit, in cable tray and/or in innerduct.

1. Optical fiber cable shall be encased in an interlocking armor with an overall jacket.
 - a. Optical fiber cable shall carry an OFCP (Optical Fiber Conductive Plenum) or OFCR (Optical Fiber Conductive Riser) rating, depending on installation environment.
 - b. Outer Sheath: The outer sheath shall be marked with the manufacturer's name, date of manufacture, fiber type, listing (OFCP or OFCR), manufacturer's identification number, and sequential length markings every two feet.
2. Temperature Range:
 - a. Storage: -40°C to +70°C (no irreversible change in attenuation).
 - b. Operating: -20°C to +70°C.
3. Humidity Range: 0% to 100%.
4. Single Unit Cables:
 - a. Maximum Tensile Strength (2 fibers).
 - 1) During Installation: 1001 Newton (225 lb. force) (no irreversible change in attenuation).
 - 2) Long Term: 300 N (67 lb. force).
 - b. Maximum Tensile Strength (≥ 4 fibers):
 - 1) During Installation: 1335 Newton (300 lb. force) (no irreversible change in attenuation).
 - 2) Long Term: 400 N (90-lb. force).
5. Multiple Unit Cables:
 - a. Maximum Tensile Strength (≤ 24 fibers).
 - 1) During Installation: 2670 Newton (600 lb. force) (no irreversible change in attenuation).
 - 2) Long Term: 180 N (801 lb. force).
 - b. Maximum Tensile Strength (36 to 48 fibers):
 - 1) During Installation: 3560 Newton (800 lb. force) (no irreversible change in attenuation).
 - 2) Long Term: 1068 N (240-lb. force).

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- c. Maximum Tensile Strength (≥ 60 fibers):
 - 1) During Installation: 4450 Newton (1000 lb. force) (no irreversible change in attenuation).
 - 2) Long Term: 1335 N (300-lb. force).
- 6. Bending Radius:
 - a. During Installation: 20 times cable diameter.
 - b. No Load: 10 times cable diameter.
- O. Fiber Hardware
 - 1. All Fiber Optic Termination Hardware shall be CommScope. Termination hardware in the Equipment Room shall be CommScope for Multi-mode applications. All rack mount enclosures shall be CommScope Uniprise Ready enclosures.
 - a. CommScope SD-1U Enclosure
 - b. CommScope SD-2U Enclosure
 - c. CommScope SD-4U Enclosure
- P. LC Connectors
 - 1. When fusion splicing is not practical, Qwik-II connectors shall be used to terminate multi-mode fiber. All Fiber Optic Connectors shall be CommScope. They shall be available in LC style connectors.
 - 2. CommScope MFC-LCF-09-5X LC Connector for 0.9 mm Fiber (MM)
- Q. Fiber Optic Adapter Splice Cassettes
 - 1. The splicing cassette is designed for use in the SD fiber shelf, which has a LGX/1000 style footprint. Fusion splices are utilized and managed inside the cassette after splicing. The cassettes are available with 12 fiber LC duplex connections in 50-micron Multi-mode fiber and Single mode Fiber versions. The splice cassette is provided with pigtailed in the appropriate fiber type and fusion splice protection sleeves. Break out kits are not required when utilizing the splice cassette.
 - 2. This product is intended for indoor use or can be used outdoors in a suitable protective enclosure.
 - a. CommScope PNL-CS-12LCX-PT Splice Cassette (MM)
- R. Fiber Optic Patch Cords
 - 1. All fiber optic patch cords shall be available in LC connector type. Cords shall be available in multiple jumper lengths. CommScope's fiber optic jumpers connect the patch panel/shelf to the equipment bay.
 - 2. Contractor will provide Six Duplex 5 foot and Six Duplex 10 foot patch cords per 12 strand backbone cable, enough to fully patch out both sides of the backbone cable.
 - a. CommScope FEXLCLC42-MXF005
 - b. CommScope FEXLCLC42-MXF010

PART 3 - EXECUTION

3.1 WIRING METHODS

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- A. Routing:
 - 1. Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters. Conceal raceway and cables, except in unfinished spaces.
 - a. Install plenum cable in environmental air spaces, including plenum ceilings.
 - b. Comply with requirements for raceways and boxes specified in Section 270528 "Pathways for Communications Systems."
- B. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

3.2 INSTALLATION OF PATHWAYS

- A. Comply with requirements for demarcation point, cabinets, and racks specified in Section 271100 "Communications Equipment Room Fittings."
- B. Comply with Section 270528 "Pathways for Communications Systems."
- C. Comply with Section 270529 "Hangers and Supports for Communications Systems."
- D. Comply with Section 270536 "Cable Trays for Communications Systems."
- E. Drawings indicate general arrangement of pathways and fittings.

3.3 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

- A. Comply with NECA 1 and NECA/BICSI 568.
- B. General Requirements for Cabling:
 - 1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.
 - 2. Comply with BICSI's "Information Transport Systems Installation Methods Manual (ITSIMM), Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
 - 3. Install 110-style IDC termination hardware unless otherwise indicated.
 - 4. Do not untwist twisted pair cables more than 1/2 inch (12 mm) from the point of termination to maintain cable geometry.
 - 5. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
 - 6. MUTOA shall not be used as a cross-connect point.
 - 7. Consolidation points may be used only for making a direct connection to equipment outlets:
 - a. Do not use consolidation point as a cross-connect point, as a patch connection, or for direct connection to workstation equipment.
 - b. Locate consolidation points for twisted-pair cables at least 49 feet from communications equipment room.
 - 8. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks,

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frames, and terminals.

9. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
 10. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
 11. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
 12. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
 13. In the communications equipment room, install a 10-foot-long service loop on each end of cable.
 14. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.
- C. Open-Cable Installation:
1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
 2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches above ceilings by cable supports not more than 60 inches apart.
 3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.
- D. Installation of Cable Routed Exposed under Raised Floors:
1. Install plenum-rated cable only.
 2. Install cabling after the flooring system has been installed in raised floor areas.
 3. Coil cable 6 feet long not less than 12 inches in diameter below each feed point.
- E. Group connecting hardware for cables into separate logical fields.
- F. Separation from EMI Sources:
1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
 2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.
 3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.

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4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
 5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
 6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.
- G. Optical Fiber Cable Installation and Termination Practices
1. The following fiber optic connector installation methods are acceptable; fusion splice connection of factory-made pigtail connectors, epoxy/polish style connectors, or non-epoxy compression cam gel style connectors. In each case, the connector manufactures' instructions shall be followed and the recommended tools and supplies, including break out kits when required, shall be used for termination and testing. All Fiber strands to be terminated including future use pairs.
 2. As per industry standard - IEC 61300-3-35 during optical fiber connector termination, certify, all terminations with a 200-power microscope (minimum). Follow all of the connector manufacturers' recommendations. Unacceptable flaws in the terminations will include, but not be limited to, scratches, full or partial cracks, bubbles, pits, or residual dirt, dust, oil, moisture, grinding or sanding debris in the connector. The acceptable final inspection shall show a connector tip that is properly aligned and free of imperfections in 100% of the core and 80% of the cladding. Any connectors that fail testing shall be inspected and re-tested after rework.
 3. During installation of optical fiber cable, do not allow pulling tension to exceed cable manufacturers' specification for the cable being installed. Only the strength member of the cable shall be subjected to the pulling tension.
 4. Clean all optical fiber connector tips prior to inserting them into mating receptacles or bulkheads and re-install dust covers. Clean the tester launch cord prior to each insertion, as well.
- H. Warranty, Service, Testing, Certification
1. The Contractor must provide an extended warranty that is inclusive of the Manufacturer's warranty to the Owner covering all network cable and connectivity hardware products comprising this installation site. The Contractor and Manufactured shall jointly provide the Owner an extended warranty of the installed system against defects in material or workmanship for a period of no less than twenty-five years (period as is customary for the Manufacturer) from the date of substantial completion. Any equipment or cabling shown to be defective shall be replaced, repaired, or adjusted free of charge. All labor and mate-rials shall be provided at no expense to the Owner.
 2. The System Contractor shall make a thorough inspection of the complete installation to ensure the following:
 - a. Complete and functional system.
 - b. Installed in accordance with manufacturers' instructions.
 - c. All cabling shall test free from all grounds, opens, and shorts.

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- d. A representative of the Owner shall have an opportunity to be present for all final testing. Coordinate final testing with Owner, schedule as near as possible to acceptance date.
- I. UTP Cables and Link Testing
1. Acceptance Testing: Test each conductor of every cable on the reel to verify length and continuity. Cables that have been damaged in transit must be replaced. Installed cable that proves to be defective will be replaced at the contractor's expense.
 2. Final Testing: All UTP cabling will be certified to meet and or exceed the specifications as set forth for Permanent Link Testing of all Power over Ethernet electrical parameters including alien crosstalk performance. Mechanical requirement testing and test methods shall meet ANSI/CEA S-90-661 or ANSI/CEA S-102-732. Certified cable channel performance shall meet or exceed the requirements of ANSI/TIA-568, ANSI/TIA-1152-A, and ISO/IEC 11801 Standards for Structured Telecommunications Cabling Installations in a configuration up to 100 meters at swept frequencies of:
 - a. 1 to 250 MHz Level III Class E for Category 6
 - b. 1 to 500 MHz Level IIIe Class EA for Category 6A.
 3. Test alien crosstalk (near-end and far-end loss) for a cabling system using a network analyzer with 100- Ω pair terminations as follows;
 - a. The test device consists of two jacks; one jack is connected to a main test unit and the other to a remote test unit; the main test unit and the remote test unit are connected with a field tester communication channel (patch cord or link).
 - b. Six-around-one cable-bundle configuration throughout the tested length.
 - c. Cable ties placed 12 inches apart for the entire length of the bundle, except the last 3.2 feet from each end; no cable-tie-induced deformation of the bundle.
 - d. Modeling four-connector channel configurations using the worst-case maximum and minimum configurations to determine the worst-case for different parameters.
 - e. Long channels with 90 meters of permanent link, 5 meters between the consolidation point and the telecommunications outlet, 10 meters of patch cords used to connect active equipment and cross-connect panels.
 - f. Measurement of alien crosstalk (near-end and far-end loss) between all pairs of the middle disturbed cable and each pair of all adjacent cables.
 - g. Measurement of power sum of all 24 adjacent pair cables.
 4. The cable tester shall be ETL verified to IEC Level V accuracy or equivalent with the latest version of firmware and shall produce an electronic or printed report, noting label information, for each cable run. These reports are to be included in the close-out documentation. Testing shall be conducted with a Fluke DSX-5000 with OLTS and OTDR functions, or equivalent, permanent link adapters, high-performance channel adapters, termination plugs, 8-pin modular couplers and analysis software. Certifications shall include the following parameters for each pair of each cable installed:
 - a. Characteristic Impedance 100 Ω +/- 15%
 - b. Wire map (pin to pin and ground connectivity)
 - c. Cable Length Permanent Link Test, station (horizontal) cable from patch panel to jack, should not exceed 295 feet (Channel length not to exceed 328 feet)

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- d. DC Loop Resistance
- e. DC Resistance Unbalanced (Difference in DC Resistance between conductors of the same pair)
- f. DC Resistance Unbalanced (Difference in DC Resistance between conductors between pairs)
- g. Return Loss
- h. Insertion Loss
 - 1) Near End Crosstalk Loss (NEXT)
 - 2) Power Sum Near End Crosstalk Loss (PSNEXT)
 - 3) Far End Crosstalk Loss (FEXT)
 - 4) Attenuation Crosstalk Ratio Far End (ACRF)
 - 5) Power Sum Attenuation Crosstalk Ratio Far End (PSACRF)
 - 6) Transverse Conversion Loss (TCL)
 - 7) Equal Level Transverse Conversion Transfer Loss (ELTCTL)
 - 8) Coupling Attenuation
 - 9) Propagation Delay
 - 10) Propagation Delay Skew
 - 11) Power Sum Alien Near-End Crosstalk Loss (PSANEXT)
 - 12) Average Power Sum Alien Near End Crosstalk Loss (Average PSANEXT)
 - 13) Power Sum Alien Far-End Crosstalk Loss (PSAFEXT)
 - 14) Power Sum Alien Attenuation to Crosstalk Ratio Far-End (PSAACRF)

J. Optical Fiber Testing

- 1. Acceptance Testing: Test each strand of every optical fiber cable on the reel with an OTDR, to verify length and continuity. Fiber cables that have been damaged in transit must be replaced. Installed fiber cable that proves to be defective will be replaced at the contractor's expense.
- 2. Final Testing: After termination, each individual fiber of each cable segment shall be tested bi-directionally using an OTDR, both to determine the installed length and continuity. All individual fibers of each cable segment will be tested using a power meter to determine the actual loss. These readings will be taken at the 850 nm and 1300 nm windows for Multi-mode and 1310 nm and 1550 nm windows for single-mode. Testing will be in both directions. The final readings shall be listed in the certification report. These readings must not be higher than the "Optimal Attenuation Loss." The OAL will be calculated using the manufacturers' factory certified test results, (dB/Km) converted to the actual installed lengths plus the manufacturers' best published attenuation losses for the connector and/or splice installed on this project. (0.20 for Connectors and 0.10 for splices.) The OAL shall be used for comparison with the end to end power loss test results prior to acceptance by the construction manager.
- 3. Fiber optic cable shall be subjected to bi-directional testing meeting ANSI/TIA-568 requirements. The cable tester shall produce a printed report, noting label information, for each cable run. These reports are to be included in the close-out documentation.

3.4 FIRESTOPPING

- A. Comply with requirements in Section 078413 "Penetration Firestopping."

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- B. Comply with TIA-569-D, Annex A, "Firestopping."
- C. Comply with "Firestopping Systems" Article in BICSI's "Telecommunications Distribution Methods Manual."

3.5 GROUNDING

- A. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems" for grounding conductors and connectors.
- B. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BIC- SI's "Telecommunications Distribution Methods Manual."
- C. Comply with TIA-607-B and NECA/BICSI-607.
- D. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.
- E. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

3.6 IDENTIFICATION

- A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."
 - 1. Administration Class: Class 2.
 - 2. Color-code cross-connect fields and apply colors to voice and data service backboards, connections, covers, and labels.
- B. Paint and label colors for equipment identification shall comply with TIA-606-B for Class 2 level of administration.
- C. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.
- D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and pathways, and equipment grounding conductors.
- E. Cable and Wire Identification:
 - 1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
 - 2. Each wire connected to building-mounted devices is not required to be numbered at

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- the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.
3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet.
 4. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.
 - a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.
 - b. Label each unit and field within distribution racks and frames.
 5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and -connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
- F. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:
1. Cables use flexible vinyl or polyester that flexes as cables are bent.
 - a. Each patch panel jack, wall plate jack, terminal cabinet connector, both ends of each cable run and on the ceiling grid bar at jack locations that are concealed above a drop ceiling shall be labeled with a cable scheme run designator machine printed labels installed according to EIA/TIA 606 standards. All labeling shall conform to industry standards and best practices. Labeling types and scheme shall be verified and coordinated with the Owner prior to any installation.
 - b. Patch panels are to be labeled based on room number (or closet number), sequential order and purpose as indicated in the below example.
 - 1) 24-port patch panels are the first and last patch panels in the rack.
 - 2) Therefore, patch panel A will range from A01-A24; patch panel B01-B48; etc.
 - c. <Room #>-<Patch Panel #><Port# on patch panel>

<Purpose> Note: Patch panel # is indicated by letter. (A, B, C, etc.)

IT Closet (Patch Panel)	Room (Faceplate)
RM228-A04-AP	MDF123-A04-AP
RM228-A05-P	MDF123-A05-P
RM228-A06-D	MDF123-A06-D

- d. Third Party Systems are to be terminated on the patch panel and labeled as indicated below. At the device, the cable should be labeled indicating closet and patch panel label. No devices should be connected directly into the switch and third-party vendors are expected to coordinate needed drops with the selected cabling vendor.

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IT Closet (Patch Panel)	Device
RM123-HVAC001	MDF123-B46-HVAC001
RM123-LGHT001	MDF123-B47-LGHT001
RM123-MRQ001	MDF123-B48-MRQ001

- e. Fire/Security/Elevator Cross Connects.
 - 1) Cross connect cables should be labeled at the demarc punch block to indicate purpose using a wrap around tag. On the far end panel, the cable should be labeled with the phone number using a wrap around label

Demarc/Punch Block	Device Panel
Fire1	<phone # on punch block>
Fire2	<phone # on punch block>
Security	<phone # on punch block>
Elevator	<phone # on punch block>
911 (to voice router)	<phone # on punch block>
SRST (to voice router)	<phone # on punch block>

3.7 FIELD QUALITY CONTROL

- A. Acceptance Testing Preparation:
 - 1. Provide notice to owner, architect and engineer 5-working days prior to commencement.
- B. Field tests and inspections must be witnessed by Architect and engineer.
- C. Tests and Inspections:
 - 1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments and inspect cabling connections for compliance with TIA-568-C.1.
 - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 - 3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.
 - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- D. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.
- E. Nonconforming Work:

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1. End-to-end cabling will be considered defective if it does not pass tests and inspections.
2. Remove and replace cabling where test results indicate that they do not comply with specified requirements.

F. Collect, assemble, and submit test and inspection reports.

G. Manufacturer Services:

1. Engage factory-authorized service representative to supervise field tests and inspections.

3.8 MAINTENANCE

A. Software Service Agreement:

1. **Technical Support:** Beginning at Substantial Completion, verify that software service agreement includes software support for two Insert number years.
2. **Upgrade Service:** At Substantial Completion, update software to latest version. Install and program software upgrades that become available within two years from date of Substantial Completion. Verify that upgrading software includes operating system and new or revised licenses for using software.
 - a. **Upgrade Notice:** No fewer than 60 days to allow Owner to schedule and access the system and to upgrade computer equipment if necessary.
3. **Upgrade Reports:** Prepare report after each update, documenting upgrades installed.

END OF SECTION 271513

SECTION 281300 - ACCESS CONTROL SYSTEM (PERFORMANCE SPEC)

PART 1 - GENERAL

1.1 PERFORMANCE STATEMENT

- A. This specification section and the accompanying video intercom system-specific Contract Documents are performance based, describing the minimum material quality, required features, and operational requirements of the system. These documents do not convey every wire that must be installed and every equipment connection that must be made. Based on the equipment constraints described and the performance required of the system, as presented in these documents, the vendor and the Contractor are solely responsible for determining all wiring, raceways, programming, and miscellaneous equipment required for a complete and operational system.

1.2 RELATED DOCUMENTS

- A. The requirements of the General Conditions, Supplementary Conditions, Division 8, Division 27, Division 28, and Drawings apply to all Work herein.
- B. Requirements of the following Division Sections apply to this section:
 - 1. Division 8 – door Hardware Schedule
 - 2. Division 26 – Electrical (Sheet Specs) (where applicable)
 - 3. Division 27 – Structured Cabling Systems
 - 4. Division 28 – All Sections

1.3 SCOPE

- A. **The basis of design shall be Verkada or an authorized equivalent. Each proposal from alternate manufacturers will be subject to individual evaluation by both the owner and the owner's representative as part of the contract's requirements.**
- B. This section specifies the finishing, installation, connection, testing and certification of a complete and fully operating Physical Access Control System, hereinafter referred to as the PACS or ACS (Access Control System). The system shall include, but not be limited to, all control equipment, power supplies, power circuits, signal initiating and signaling devices, conduit, wire, fittings, and all other accessories required to provide a complete and operable system.
- C. Security system devices indicated are for reference and coordination purposes only. The installing contractor shall design and provide a complete system, meeting the requirement of Specification, Division 26 00 00. The Contractor shall provide all security system devices required for complete system perimeter coverage acceptable to all governing authorities, Architect and Owner.
- D. The system shall include security for all access into building, including but not limited to gates, exterior doors, MDF/IDF rooms, cash or vault rooms, and interior space with motion detection. Card reader access interface must also be provided at locations noted on drawings.
 - 1. The Control System shall be the product of a single manufacturer.
 - 2. Tag all conductors or cables at each end.
 - 3. Installation of security panels.

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4. Interconnection of security panels.
 5. Installation of new security devices.
 6. Full coverage of all first level windows, entry and exit doors.
 7. Preconstruction meeting with Owner's personnel, installing technician and project superintendent.
- E. The system shall include security for all access into building, including but not limited to the following:
1. Control Panels
 2. Power Supplies.
 3. Interconnection of panels.
 4. Installation of new devices.
 5. Card reader.
 6. Magnetic locking hardware
 7. Request to exit devices
 8. Door position sensors
 9. Door Hardware (as specified herein and/or in Division 08, door hardware)
 10. 1Server (or equivalent appliance / system)s
 11. Clients
 12. Mobile application
 13. Badging Station; including Enrollment Readers, Cameras, Software, and Printers
 14. Lockdown and Lockout Buttons
 15. Audio Intercom Systems
 16. Licensing
 17. Integration
 18. All additional material, hardware, and labor required for a fully functional, turnkey system
- F. All system programming will be performed by the system installer. The system installer will be required to meet with the Owner, engineer, and system manager to discuss wiring and termination of the system control panels and field devices prior to installation.
- G. Licensing: The contractor shall NOT utilize any of the owner's existing licensing for this scope of work. All licensing shall be provided by the contractor, no exceptions. Including, but not limited to the following:
1. Portal Licensing
 2. Controller Licensing
 3. Wireless Licensing
 4. Video Management Software Integration Licensing
- H. Contractor shall refer to door hardware specification and Architectural Door Schedule. Provide and install all hardware specified to be provided by the "Access Control Contractor", "Security Installer", "Division 28", or any variation thereof.
- I. This system shall be interconnected to a unified user platform that can be accessed and through any computer / mobile device on the owner's network. The contractor shall coordinate the designation furnish and install conductors for all new circuits as shown, scheduled, specified, and required. All conductors for power and lighting shall be installed in conduit (if applicable).
- J. The documents issued for this project are conceptual in nature, including but not limited to specifications and drawings. It shall be the responsibility of the approved installer to furnish a

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complete and functional system, including the items shown on the drawings, in the specifications, and items not designated in either. The installer's shop drawings and product data submittals shall represent a complete system, and documents accepted do not relieve the installer from being required to provide any materials, equipment, or labor to furnish a complete and functional system as recognized by the Project's Technology Consultant and the Owner.

K. Related Sections: Other Division 20-28 Sections contain requirements related to the work of this Section. These may include, but not be limited to, the following sections:

1. Testing - Section 27 05 00
2. Interior Communication Pathways - Section 27 05 28
3. Grounding and Bonding - Section 27 05 26

L. Permits Fees Taxes and inspection

1. The Contractor shall obtain all applicable permit, license, and inspection prior to performing work, during work, and upon completion.
2. The Contractor shall pay all applicable permit fees, license fees, inspection fees, taxes imposed by governmental entities.
3. The Contractor shall pay fees to service provider regarding services.

1.4 QUALITY ASSURANCE

A. Manufacturers: If they comply with these specifications and requirements, products of the following manufacturers will be acceptable. Contractor to request written approval for alternates:

1. Electronic Access Control System
2. Hardware and Server (or equivalent appliance / system).
3. Field Devices & Panels
4. Controllers
5. Power supplies

B. Qualifications

1. The system programmer shall have attended manufacturer training and obtained certification in selected manufacturer.
2. Optionally, the system programmer shall have attended manufacturer training and obtained certification in selected manufacturer.
3. The system programmer shall be a top tier user of the approved manufacturer.
4. The system programmer shall submit proof of certifications.
5. The owner reserves the right to reject any contractor who fails to meet set criteria in this specification.

C. Warranty

1. The product shall perform in all material respects in accordance with the accompanying user manual, and the media on which the Software Product resides will be free from defects in materials and workmanship under normal use. Software defects are covered through Service Releases and Cumulative Updates which are available for a period of 1 year from the date of the software purchase.
2. Extended warranty of 10 years or greater shall be available from manufacturer and contractor support service, which includes the following additional services over the standard warranty:
 - a. Access to phone support and online chat for technical assistance
 - b. Online case management

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- c. Online system availability monitor
- d. Access to Major and Minor Release Upgrades
- e. 24/7 pager support and dedicated support specialist
- f. On-site assistance and troubleshooting service options (on-site availability across multiple sites)

1.5 CODES AND STANDARDS

- A. Codes and Standards: The system shall comply with the applicable Codes and Standards as follows:
- 1. NFPA 70 National Electrical Code
 - 2. NFPA 72 National Electrical Code
 - 3. NFPA 101 Life Safety
 - 4. UL 294 Standard for Access Control Systems
 - 5. TIA-569-B Commercial Building Standard for Telecommunications Pathways and Spaces
 - 6. UL 444 Standard for Communication Cable
 - 7. ULC-S319 Standard for Electric Access Control Systems
 - 8. CSPN First Level Security Certification
 - 9. EN60839-11-1 Standard for Electronic Access Control System
 - 10. Local and State Building Codes.
 - 11. All requirements of the local Authority Having Jurisdiction (AHJ).
 - 12. Texas Accessibility Standards (T.A.S.)
 - 13. Requirements of American Disabilities Act (Public law 101-336).
 - 14. Texas Insurance Code

1.6 CONDITIONS

- A. The ACS is a modular and networked based system providing physical access control security to a Wide Area campus enterprise. The system shall be capable of controlling and integrating multiple security functions including the configuration, management and monitoring of cardholder access, locking hardware units, events, alarms, visitors, and real-time tracking and reporting. The ACS is to be alterable at any time depending on the facility requirements and will allow for easy upgradeability or modification of network processors, controller, interface modules, card data, inputs, outputs, and remote workstations.
- B. Provide and transfer all required licensing to the owner.
- C. Provide local communication port at each panel for local configuration of system with laptop.
- D. Locate all main control panels in MDF/IDF room(s) of building or Alternate location provide by the Owner.
- E. Connect All Access Control Panels to the Owners Network. All cables shall be terminated on Patch Panel and labeled. All cables installed shall use only products required in the Structured Cabling Specification. If more than one manufacturer is specified, the contractor shall only install products that will match the remainder of the project. All cables installed must carry the full manufactures warranty.
- F. Provide and install all power supplies as required. Provide a minimum of (1) Power Supply per panel. Coordinate with owner's I.T. department for UPS integration & configuration to access control equipment.

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- G. Final software configuration / programming of system integration will require owner / contractor consultation.

PART 2 - PRODUCTS

2.1 MAIN ACCESS CONTROL PANELS

- A. The Access Control System (ACS) shall provide controlled access to designated access portal and monitor any exterior portal that are not access controlled.
- B. Standard access control portals shall be:
 - 1. All Exterior doorways to building(s). (Excluding any exterior doorways that do not lead into building, i.e. Fire Riser Rooms, Electrical Rooms etc...)
 - 2. All MDF/IDF rooms.
 - 3. All gated vehicle entrances with video intercom devices.
- C. Each access-controlled portal shall be equipped with:
 - 1. MultiClass Credential Reader, Bluetooth authentication, or equivalent protocols acceptable.
 - 2. Door Position Sensors – All door contacts must be DPDT. Typical door position sensor locations include but not limited to:
 - a. Recessed
 - b. Surface Mount/ Roof Hatch
 - c. Roll-up Door
- D. Motion Request-to-Exit (only if REX is not integrated into the door hardware)
- E. Electrified door hardware to be provided and installed by others. Lock power to door hardware shall be provided by the ACS integrator and centralized at MDFs and IDFs. ACS Integrator shall provide cabling and connections between the door hardware and the Access Control System.
- F. Access Control Portals shall not exceed 500' distance from the associated control panel.
- G. Support for Bluetooth authentication and managing access to Bluetooth unlock on a per-user basis natively within the UMS.
- H. Software
 - 1. Software licenses for server (or equivalent appliance / system)s and devices must be a minimum duration of 5 years (with option of 10 year warranty).
- I. Emergency Lock-Down Button
 - 1. Safety Technology International Emergency push button, with cover, turn to reset (if applicable to project)
- J. Local Alarm
 - 1. System Sensor – This device will need to be powered by the centralized lock power supply. Contractor to ensure the power supply is sized appropriately.

2.2 FIELD DEVICES

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- A. Modules / Controllers:
- B. System Control:
 - 1. Cloud-based management server (or equivalent appliance / system) or on-premise (depending on owner selection).
- C. Door Controllers:
 - 1. Sixteen Reader Kit Prewired
 - 2. Eight Reader Kit prewired
 - 3. Four Reader Kit prewired
 - 4. Single-Door Reader Kit prewired
- D. Credential Readers:
 - 1. Wall Mounted Applications:
 - a. Card Reader – Contactless, SmartCard Reader, black in color.
 - b. Provide card reader backplate, engraved with owner’s standard naming convention, black Lexan.
 - 2. Mullion Mounted Applications:
 - a. Card Reader – Contactless, SmartCard Reader, black in color.
 - b. Provide card reader backplate, engraved with owner’s standard naming convention, black Lexan.
- E. Access Credentials:
 - 1. Provide two hundred cards per campus site. Card shall be able to print directly on the face of card.
 - 2. Coordinate with owner for card reader credential list per campus. Level of access for each card holder must be in written approval by owner and provided in spreadsheet format.
- F. Wiring:
 - 1. All Access control wiring shall be purple in color on the entire project.
 - 2. Wire scheme and conductor quantity shall be as required by the manufacture’s specifications. Contractor to provide and install shielded cable as required.
- G. Approved Products:
 - 1. Access control, plenum, composite cable – 22/6 shielded, 22/4, 22/2, 18/4.
 - 2. Tappan No. TAPSEC or approved equivalent
 - 3. Windy City Wire or approved equivalent

2.3 ENCLOSURE OPTIONS

- A. 16-door access control enclosure
- B. 8-door access control enclosure
- C. 4-door access control enclosure
- D. Expansion enclosure (to be used after the 8-door and 4-door panels are full and input and output interface modules)
 - 1. One (1) 20x24” enclosure

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- E. Centralized Lock Power Supply
 - 1. LifeSafety Power Supply or approved equivalent.
- F. Licensing: Provide all licenses required for complete and functional system in quantities as required:
 - 1. Client Connection Licenses
 - 2. Lock Power supply integration
 - 3. Bosch Intrusion Integration (optional)
- G. Contractor shall provide the following devices for attic stock for the Access Control System that is installed, with a quantity not to exceed minimum of 25% of total card readers and door controllers installed (for each site) . Contractor shall confirm and Coordinate manufacturer and model number of equipment installed.
- H. Contractor shall integrate the Access Control System, Video Surveillance System, and Intrusion Detection systems into unified user platform system (UUPS). Coordinate with other trades as necessary.

2.4 ELECTRONIC ACCESS CONTROL SYSTEM

- A. The ACS shall be an enterprise class IP access control software solution. It shall be fully embedded within a Unified Security Platform (USP). The USP shall allow the seamless unification of the ACS with all other division 28 safety & security systems.
- B. The ACS shall be highly scalable to support configurations consisting of thousands of doors with facilities spanning multiple geographic areas.
- C. The ACS shall support an unrestricted number of logs and historical transactions (events and alarms) with the maximum allowed being limited by the amount of hard disk space (or cloud storage) available.
- D. The ACS shall support a variety of access control functionalities, including but not limited to:
 - 1. Controller (Unit) management, door management, elevator management, and area management.
 - 2. Cardholder and cardholder group management, credential management, and access rule management.
 - 3. Badge printing and template creation.
 - 4. Visitor Management. (Specifier, additional license required)
 - 5. People counting, area presence tracking, and mustering.
 - 6. Offering a framework for third party hardware integration such as card and signature scanner (optional).
 - 7. Provide UL listed and labeled equipment for commercial grade building access.
 - 8. Provide AC power failure and low battery reporting. Provide detection and notification of battery disconnection or system ground faults. The battery shall be maintenance free. Provide sufficient battery capacity for operation without AC power for twenty-four hours of normal supervision with 20% spare battery capacity.
- E. All external connections of the control panel shall withstand 6 kilovolt transients to chassis ground. Upon AC power failure, the power supply shall automatically transfer the system to battery backup.

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- F. Contractor shall provide main access control panel. Contractor shall provide number of controllers to monitor cameras, all exterior door contacts associated with intrusion system, and any card reader-controlled doors based on the contract documents with 25% spare capacity for future expansion of system.
- G. Provide panel with terminal device for local connection to configure the system with USB drive or laptop. Confirm communication protocol with owner.
- H. Provide Network interface to connect to the Owner's access control system.
- I. The contractor must provide owner with qty (5) iterations of graphic user interface programming sessions. Final software configuration/programming of system integration will require owner/contractor consultation and sign-off approval.

2.5 FAILOVER AND STANDBY REQUIREMENTS

- A. The USP shall support native and off-the-shelf failover options.
- B. Failover Directory

2.6 ACCESS MANAGEMENT

- A. The ACS shall be based on an open architecture able to support multiple access control hardware manufacturers. The ACS shall be able to integrate with multiple non-proprietary interface modules and controllers, access readers, and other third-party applications.
- B. The ACS shall be an IP enabled solution. All communication between the ACS and hardware controllers shall be based on standard TCP/IP protocol.
- C. Access Manager Role
 - 1. The Access Manager Role shall be the server (or equivalent appliance / system) (or equivalent appliance / system) that synchronizes all access control hardware units under its control, such as door controllers and I/O modules. It shall also be able to validate and log all access activities and events when the door controllers and I/O modules are online.
 - 2. The Access Manager Role shall maintain the communication link with the hardware controllers under its control. It shall also continuously monitor whether the controllers are online or offline.
 - 3. Synchronization of hardware units shall be automated and transparent to users and shall occur in the background. It shall also be possible to manually synchronize units or to synchronize units on a schedule.
 - 4. The Access Manager Role shall support doors and controllers located within one or more facilities. The Access Server (or equivalent appliance / system) shall support a minimum of 200 readers and up to 2000 readers per computer.
- D. The Access Server (or equivalent appliance / system) shall store all access events associated with the doors, areas, hardware zones (hardware input points), elevators, and controllers

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under its direct control.

2.7 ACS GLOBAL CARDHOLDER MANAGEMENT

- A. The ACS shall support global cardholder management and synchronization between a central independent site and remote independent sites, all of which can have their own Directory and databases.
- B. It shall be possible to synchronize the following entities and their configuration data:
 - 1. Cardholders (incl. custom fields)
 - 2. Cardholder groups
 - 3. Credentials
 - 4. Badge templates
- C. Cardholders and other synchronized entities can be added centrally and synchronized to remote sites for central cardholder management.
- D. Cardholders and other synchronized entities can be added at remote sites and synchronized to the central site and other remote sites.
- E. The ACS shall support the assignment of a single card per cardholder across all of an organization's sites.
- F. Manual and scheduled synchronization shall be supported.
- G. The ACS shall support Manufacturer OSDP command.

2.8 ACS HARDWARE COMPATIBILITY LIST

- A. The ACS shall support encryption keys.
- B. The ACS shall support 802.1x authentication.
- C. The ACS shall support embedded certificate validation engine.
- D. The ACS shall support the use of TLS 1.2 and certificates.
- E. The ACS shall support OSDP transparent reader mode to read Desfire credentials or equivalent.
- F. The ACS shall support multiple types of hardware devices: single-reader controllers, 2-reader controllers, 1- to 64-reader controllers, integrated readers and door controllers, and Power-over-Ethernet (PoE) enabled door controllers.
- G. The ACS shall support most industry standard card readers that output card data using the Wiegand protocol and Clock-and-Data.
- H. The following USB enrollment readers shall be supported: (Specifier, additional license required)

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2.9 SEAMLESS UNIFICATION WITH VMS

- A. Through the USP, the ACS shall support integration with an IP Video Surveillance System or VMS. Integration with an IP video surveillance system shall permit the user to view live, recorded video, set triggers for ACS and/or VMS reporting.
- B. Users shall be able to associate one or more video cameras to the following entity types: doors, elevator and hardware zones (input points), and more.
- C. The Monitoring UI shall present a true Unified Security Interface for access control and video surveillance. Advanced live video viewing and playback of archived video shall be available through the Monitoring UI.
- D. It shall be possible to view video associated with access control events when viewing a report.

2.10 ACS CONTROLLER (UNIT) MANAGEMENT

- A. The ACS shall support the discovery, configuration, and management of IP enabled controllers and I/O modules (hardware units). A user shall be permitted to add, delete, or modify a controller if they have the appropriate privileges.
- B. Custom fields shall be supported for both cardholders and cardholder groups.
- C. The ACS shall support unit configuration through a preconfigured door template.
- D. The ACS shall support automatic unit discovery. The user shall establish the settings for discovery ports and for the types of unit discovery and the ACS shall automatically detect all connected devices.
- E. The ACS shall support a unit swap utility for swapping out an existing controller with a new controller. The unit swap utility shall avoid the reprogramming of the system whenever a unit is replaced. All logs and events from the old unit shall be maintained.
- F. The ACS shall support pre-configuration of the system prior to the physical hardware installation.
- G. The ACS shall support Firmware upgrade in bulk from the application.

2.11 ACS CARDHOLDER AND CARDHOLDER GROUP MANAGEMENT

- A. The ACS shall support the configuration and management of cardholders and cardholder groups. A user shall be able to add, delete, or modify a cardholder or cardholder group if they have the appropriate privileges.
- B. Custom fields shall be supported for both cardholders and cardholder groups.

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- C. The ACS shall permit the following activation/expiration options for a cardholder's profile: delayed activation of a cardholder's profile, expiration based on the date of first use of credentials, or expiration on a user-defined date.
- D. It shall be possible to set a start date and expiration date for the association of a cardholder and an access rule for temporary access.
- E. It shall be possible to associate a picture to a cardholder's profile. The picture shall be imported from a file, captured with a digital camera, or captured from a video surveillance camera. When a cardholder event occurs, the picture of the cardholder shall be displayed in the Monitoring UI. The ACS shall support multiple standard picture formats.
- F. Cardholder groups shall enable the grouping of cardholders to facilitate mass changes to system settings. It shall be possible to assign cardholder groups to access rules, thus avoiding the assignment of one cardholder at a time.
- G. It shall be possible to search by picture association, custom fields, names, and credential codes.
- H. It shall be possible to select multiple cardholders for immediate deactivation or reactivation.
- I. The ACS shall support the synchronization of cardholders and cardholders' group through Active Directory including the credentials and pictures of the cardholders. (Specifier, Active Directory integration requires a license and available in Professional and up). It shall be possible to import cardholders from Azure AD and other equivalent database systems.
- J. It shall support the ability to track unused credentials for 30 days or any specified # of days determined by owner.

2.12 ACS CREDENTIAL MANAGEMENT

- A. The ACS shall support the configuration and management of credentials, for example access cards and keypad PIN numbers. A user shall be able to add, delete, or modify a credential if the user has the appropriate privileges.
- B. The ACS shall support reader transparent mode.
- C. Users shall be able to add Custom Fields (user-defined fields) to credentials. Creating a new credential shall be accomplished either manually or automatically.
- D. Automatic creation shall allow the user to create a credential entity by presenting a credential to a selected reader. The ACS shall read the card data and associate it to the credential entity. It shall be possible to automatically enroll any card format.
- E. The ACS shall support high assurance credentials using validation of a certificate.
- F. The ACS shall support multiple credentials per cardholder without necessitating duplicate cardholder information. The ACS shall automatically detect and prevent attempts to register an already-registered credential.

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- G. It shall be possible to natively encode Desfire credentials from the user interface using customer's own keys and configuration.
- H. Batch enrollment of credentials shall be supported.
- I. The ACS shall provide a workflow for badge issuance and card requests.
- J. It shall be possible to support natively PIV credential in the system.
- K. The ACS shall support the use of license plates as a credential.
- L. The ACS shall support duress pin.
- M. The ACS shall natively support the creation and management of mobile IDs in the same way as other credentials.

2.13 ACS CUSTOM FORMATS

- A. A custom card format feature shall allow the administrator to add additional custom card formats using an intuitive tool within the Configuration UI. The custom card format tool shall be flexible in the following ways:
 - 1. Once enrolled, new custom card formats shall appear in the card format lists for manual card enrollment.
 - 2. An unrestricted number of additional custom card formats can be added.
 - 3. Shall support credential with up to 256 bits.
 - 4. The administrator shall be able to set the following options when defining a new format:
 - a. The order in which card fields appear in the user interface or CSA.
 - b. Whether a field is hidden from or visible to an operator.
 - c. Whether a field is read only or modifiable by an operator.
 - d. Complex parity checking schemes.
 - e. The order and location of a field's data. Location can be defined on a bit-by-bit basis.
 - f. Application ID and keys for Desfire EV1 credentials.

2.14 ACS BADGE DESIGNER

- A. The badge designer shall allow the creation of badge templates that define the content and presentation format of a cardholder badge to be printed.
- B. Badge production shall consist of selecting the credential, the badge template, and clicking print.
- C. Batch printing of cards shall be available.
- D. The contents of a badge template can include: cardholder's first and last name, picture, custom fields, bitmap graphics, lines, ovals, rectangles, dynamic text labels linked to custom fields and static text labels, and barcodes (Interleaved 2 of 5, Extended Code 39).

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- E. Copy and paste of badge template objects shall be available.
- F. It shall be possible to set the border thickness and color, the fill color of badge objects (content), and the color of text labels.
- G. Settings, such as object transparency, text orientation, and auto-sizing of text shall be available or transparent to the user.
- H. Supported badge formats shall be (portrait and landscape): CR70 (2.875" x 2.125"), CR80 (3.37" x 2.125"), CR90 (3.63" x 2.37"), CR100 (3.88" x 2.63"), and custom card sizes.
- I. Dual-sided badges shall be supported.
- J. A badge template import and export function shall be available to allow the sharing of badge templates between distinct or independent ACS.
- K. Chromakey shall be supported.

2.15 ACS DOOR MANAGEMENT

- A. The ACS shall support the configuration and management of doors. A user shall be able to add, delete, or modify a door if they have the appropriate privileges.
- B. The ACS shall permit multiple access rules to be associated to a door.
- C. It shall be possible to unlock all doors from an area at once.
- D. The ACS shall support the following forms of authentication: Card Only, Card or Keypad (PIN), or Card and Keypad (PIN). It shall be possible to define a schedule for when Card Only or Card and Keypad authentication modes shall be required.
- E. It shall be possible to set an extended grant time on a per-door basis (in addition to the standard grant time). Cardholder properties shall include the option of using the extended grant time. When flagged cardholders are granted access, the door shall be unlocked for the duration of the extended grant time instead of the standard grant time.
- F. The ACS shall allow the configuration of the relocking mode on doors such as on door open, after a definite time, or on door close.
- G. The ACS shall support the ability to enforce the use of two valid reads from different cardholders to grant access to an area.
- H. The ACS shall support the ability to enable access rules for other cardholders once a supervisor has accessed an area.
- I. The ACS shall support the ability to enable unlocking schedule on a door once an employee has entered the facility.
- J. Unlocking schedules and exceptions to unlocking schedules shall be associated with a door. An unlocking schedule shall determine when a door should be automatically unlocked. The ACS shall

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also support the use of a specific offline unlocking schedule. Exceptions to unlocking schedules shall be used to define time periods during which unlocking schedules shall not be applied, such as during statutory holidays.

- K. The ACS shall support one or more cameras per door. Video shall then be associated to door access events, such as access grant or access denied.

2.16 ACS VISITOR MANAGEMENT

- A. The ACS shall support the configuration and management of visitors. A user shall be able to enroll or remove a visitor if they have the appropriate privileges. The ACS shall support the check-in and check-out of visitors from the Monitoring UI.
- B. A visitor check-in wizard shall facilitate the enrollment process, allowing a user to specify the visitor's specific information.
- C. It shall be possible to set a host leading a group of visitors and a trailing host walking behind visitors, triggering alert if a visitor is not following the delegation.
- D. The ACS shall permit the following credential options during visitor check-in:
 - 1. Use an existing credential.
 - 2. Automatically create a new credential.
 - 3. Manually create a new credential.
- E. The ACS shall support the creation of a pool of visitor credentials in advance. Existing visitor credentials shall be assigned to visitors during the check-in process.
- F. The ACS shall permit cardholder groups to be designated as "available for visitors". Users shall be able to define the access privileges for the cardholder groups (visitor cardholder groups) in advance. During visitor check-in, the user shall select the appropriate visitor cardholder group to associate with a visitor. All of the visitor cardholder group access privileges shall be automatically transferred to the visitor. This feature shall permit the creation of multiple types of visitor groups and associated privileges, such as for contractors, VIPs, and day visitors. Visitors added to a visitor cardholder group in the Monitoring UI shall be automatically updated in the Configuration UI cardholder group screen.
- G. A visitor's profile shall support the real-time modification of visitor information after a visitor has checked in.
- H. The ACS shall also provide comprehensive visitor tracking and visitor reporting. Through the real-time tracking feature, the ACS shall generate a real-time and historical visitor activity listing in the Monitoring UI. The ACS shall also generate visitor-specific reports that provide comprehensive listings of visitors as well as full details on their movement.
- I. It shall be possible to exempt a user from any Anti-Passback rules in effect.
- J. The operator shall be able to print visitor badges during the check-in process. The printing of both paper badges (visitor without an assigned credential) and actual credentials shall be supported.

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- K. Visitor management and reporting shall be available through the Web Client as well.
- L. It shall be possible to locate a visitor's information or profile by swiping the visitor's credential (card) at a USB reader.
- M. It shall be possible to tag the person visited to the visitor's profile.
- N. It shall be possible to require that the visitor must have an escort to enter an area and that the escort must badge-in to confirm the access of the visitor.
- O. The ACS system shall support third party visitor management solutions.

2.17 ACS PEOPLE COUNTING & AREA PRESENCE TRACKING (MUSTERING)

- A. The ACS shall support people counting (or area presence tracking). The ACS shall be able to monitor and report the number of cardholders in an area in real-time and for all areas. Monitoring shall be based on the entire access control infrastructure, for both local areas and those in remote geographic locations. People counting can also be used to perform mustering.
- B. It shall be possible to control the maximum occupancy of an area by setting a threshold and user notification when reaching the limit.
- C. The ACS shall report area presence counts in the UI. Area presence tracks shall dynamically track the total number of cardholders in an area. Displayed data shall be updated dynamically.
- D. The ACS shall support mustering through the use of mobile readers (requires additional software and hardware from third-party).
- E. The ACS shall provide a native dedicated mustering task using a USB, mobile, or wall reader.
- F. The ACS shall be able to generate an area presence report listing the cardholders located in one or more areas, accessible through the Monitoring UI. It shall be possible to filter the report by area and time period. The report shall also include activity from sub-areas (nested areas).
- G. Through people counting, the ACS shall be able to generate First Person In and Last Person Out events. The First Person In event shall detect when the first cardholder enters an empty area. The Last Person Out event shall detect when the last cardholder leaves an area. It shall be possible to trigger actions from both events such as sending a message or triggering an alarm.
- H. The ACS shall be able to determine the entry of a cardholder based on a dedicated sensor.

2.18 ACS CUSTOM FIELDS (USER-DEFINED FIELDS)

- A. The ACS shall permit the creation of custom fields. Up to 1,000 custom fields shall be supported.
- B. Custom fields shall be supported for the following entities: cardholders, cardholder groups,

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credentials, and visitors.

- C. Supported custom fields shall include: text, integers, decimal numbers, dates, Boolean, and images (graphics).
- D. Users shall be able to define a default value for a custom field.
- E. The creation of new custom field types shall be possible. New custom field types shall be based on the standard custom fields supported. They shall support user-defined values from which an operator must make a selection.
- F. Administrators have the ability to define which users can view and modify specific custom fields. This shall limit the access to custom field data to users with pre-defined privileges. The ACS shall support querying and report generation using custom fields.
- G. Custom fields can be grouped and ordered within these groups as defined by the user.
- H. Values for custom fields can be imported using the Import Tool.

2.19 ACS Import Tool (Specifier, additional license required)

- A. The ACS shall support an integrated Import Tool to facilitate the import of existing cardholder and credential data. The import of data shall be through the use of the CSV file format. The tool shall be available from the Configuration UI.
- B. The Import Tool shall also support the ability to manually import data that has been exported from a third-party database if it is in CSV format.
- C. The import tool shall permit the import of the following data:
 - 1. Cardholder name, descriptions, picture, email, and status.
 - 2. Cardholder group information.
 - 3. Credential name, status, format, and card number (including credentials with custom formats).
 - 4. Partition information.
 - 5. Custom fields.
 - 6. Activation date and expiration date.
 - 7. Update cardholder group association.
- D. Full flexibility in selecting the fields to be imported during an import session shall be available.
- E. The option to use a custom and unique cardholder key shall be specified during the import process to ensure that cardholders with duplicate names will not have their data overwritten. Cardholder key generation shall be automated. The end user shall have the option to select which fields will be used to create this unique key, for example credential number, custom fields, or cardholder name.
- F. The ACS shall also support re-importing a CSV file containing new information to update existing information in the ACS database. Re-importing shall enable bulk amendments to existing access control data.

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2.20 GENERAL CLIENT SOFTWARE REQUIREMENTS

- A. The Client Software Applications (CSA) shall provide the user interface for USP configuration and monitoring over any network and be accessible locally or from a remote connection.
- B. The CSA shall consist of the Configuration UI for system configuration and the Monitoring UI for monitoring. The CSA shall be Windows-based (or equivalent operating system) and provide an easy-to-use graphical user interface (UI).
- C. The CSA for monitoring shall support running in 64-bit mode.
- D. The Server (or equivalent appliance / system) Administrator shall be used to configure the server (or equivalent appliance / system) database(s). It shall be web-based and accessible locally on the SSM or across the network.
- E. The CSA shall seamlessly merge access control, license plate recognition (ALPR), and video functionalities within the same user application.
- F. The USP shall use the latest user interface (UI) development and programming technologies such as Microsoft WPF (Windows Presentation Foundation), the XAML markup language, and the .NET software framework.
- G. All applications shall provide an authentication mechanism, which verifies the validity of the user. As such, the administrator (who has all rights and privileges) can define specific access rights and privileges for each user in the system.
- H. The CSA shall support multiple languages, including but not limited to the following: English, French, Arabic, Czech, Dutch, German, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Persian (Farsi), Polish, Portuguese (Brazilian), Simplified and Traditional Chinese, Russian, Spanish, Swedish, Thai, Turkish, and Vietnamese.
- I. To enhance usability and operator efficiency, the Configuration UI and Monitoring UI shall support many of the latest UI such as:
 - 1. A customizable Home Page that includes favorite and recently used tasks.
 - 2. Task-oriented approach for administrator/operator activities where each type of activity
 - 3. (surveillance, visitor management, individual reports, and more) is an operator task.
 - 4. Consolidated and consistent workflows for video, ALPR, and access control.
 - 5. Single click functionality for reporting and tracking. The Monitoring UI shall support both single-click reporting for access control, ALPR, and video, as well as single-click tracking of areas, cameras, doors, zones, cardholders, elevators, ALPR entities, and more. Single-click reporting or tracking shall create a new task with the selected entities to report on or track.
- J. Configuration UI and Monitoring UI Home Page and Tasks
 - 1. The Configuration UI and Monitoring UI shall be task oriented.
 - 2. A task shall be user interface design patterns whose goal is to simplify the user interface by grouping related features from different systems such as video and access, in the same

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- display window. Features shall be grouped together in a task based on their shared ability to help the user perform a specific task.
3. Tasks shall be accessible via the Home Page of either the Configuration or the Surveillance CSA.
 4. Newly created tasks shall be accessible via the Configuration UI or the Monitoring UI taskbar.
 5. Similar tasks shall be grouped into the following categories:
 - a. Operation: Access control management, LRP management, and more.
 - b. Investigation: access control activity reports, visitor activity reports, alarm reports, and more.
 - c. Maintenance: Access control, troubleshooters, audit trails, health-related reports, and more.
 6. An operator shall be able to launch a specific task only if they have the appropriate privileges.
 7. The Home Page content shall be customizable through the use of privileges to hide tasks that an operator should not have access to and through a list of favorite and recently used tasks. In addition, editing a USP XML file to add new tasks on the fly shall also be possible.
- K. The Contractor shall provide up to XX number of simultaneous Clients. (Specifier, client connections are concurrent, the first 5 client connections are included, specify a Site License after 40 client connections (Enterprise only))

2.21 CONFIGURATION USER INTERFACE

A. General

1. The Configuration UI application shall allow the administrator or users with appropriate privileges to change the system configuration. The Configuration UI shall provide decentralized configuration and administration of the USP system from anywhere on the IP network.
2. The configuration of all embedded ACS, VMS, and ALPR systems shall be accessible via the Configuration UI.
3. The Configuration UI shall have a home page with single-click access to various tasks.
4. The Configuration UI shall include a variety of tools such as troubleshooting utilities, import tools, and a unit discover tool, amongst many more.
5. The Configuration UI shall include a static reporting interface to:
 - a. View historical events based on entity activity. The user shall be able to perform such actions as printing a report and troubleshooting a specific access event from the reporting view.
 - b. View audit trails that show a history of user/administrator changes to an entity.
6. Common entities such as users, schedules, alarms, and many more, can be reused by all embedded systems (ACS, VMS, and ALPR).

2.22 ACS CLIENT USER INTERFACE (UI)

- A. The Monitoring UI shall fulfill the role of a Unified Security Interface that is able to monitor video, ALPR, and access control events and alarms, as well as view live and recorded video.
- B. The Monitoring UI shall provide a graphical user interface to control and monitor the USP over any IP network. It shall allow administrators and operators with appropriate privileges to monitor their unified security platform, run reports, and manage alarms.

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- C. To enhance usability and operator efficiency, the Monitoring UI shall support the following UI concepts:
1. Dynamically adaptive interface that adjusts in real-time to what the operator is doing.
 2. Dynamic controls loaded with entity-specific widgets (for example, door and camera widgets).
 3. Use of transparent overlays that can display multiple types of data in a seamless fashion.
 4. Display tile menus and quick commands.
 5. Consolidated and consistent workflows.
 6. Tile menus and quick commands easily accessible within every display tile of the user workspace.
 7. Single click functionality for reporting and tracking. The Monitoring UI shall support both single-click reporting for access control, ALPR, and video, as well as single-click tracking of areas, cameras, doors, zones, cardholders, elevators, ALPR entities, and more. Single-click reporting or tracking shall create a new task with the selected entities to report on or to track.
- D. Monitoring UI Home Page and Tasks
1. Similar tasks shall be grouped into the following categories:
 - a. Operation: Access control/LRP/video surveillance, visitor management, mustering, access control and video alarm monitoring, and more.
 - b. Investigation: Video bookmark/motion/archive reports, access control activity reports, visitor activity reports, alarm reports, ALPR activity reports, and more.
 - c. Maintenance: Access control and video configuration reports, troubleshooters, audit trails, and more.
- E. Dynamically Adaptive UI, Controls section, and Widgets
1. The Monitoring UI shall dynamically adapt to what the operator is doing. This shall be accomplished through the concept of widgets that are grouped in the Monitoring UI Controls section.
 2. Widgets shall be mini-applications or mini-groupings in the Monitoring UI Controls section that let the operator perform common tasks and provide them with fast access to information and actions.
 3. With a single click on an entity (for example, door or camera) the specific widgets associated to that entity appear and other non-relevant widgets disappear dynamically
 4. (instantly). Widgets shall bring the operator information such as door status and camera stream information, as well as user actions, such as door unlock, PTZ controls, and more.
 5. Specific widgets include those for a door, camera, alarm, zone, display tile, video stream (statistics), PTZ camera, and more.
- F. Operator Workflows
1. A workflow shall be a sequence of operations an operator or administrator shall execute to complete an activity. The “flow” relates to a clearly defined timeline or sequence for executing the activity.
 2. The Monitoring UI shall be equipped with consistent workflows for the ALPR, video, and access control systems that it unifies.
 3. Generating or printing a report, setting up or acknowledging an alarm, or creating an incident report shall follow the same process (workflow) whether the operator is working with video, ALPR, or access control, or with both video and access control.
- G. Each task within the Monitoring UI shall consist of one or more of the following items:
1. Event list.

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2. Logical tree. Doors, cameras, zones, ALPR units, and elevators shall be grouped under Areas in a hierarchical fashion.
 3. Entities list of all entities being tracked.
 4. Display tiles with various patterns (1 x 1, 2 x 2, and more).
 5. Display tile menu with various commands related to cameras, doors, PTZ, and tile controls.
 6. Control section with widgets.
- H. The Monitoring UI shall support multiple event lists and display tile patterns, including:
1. Event/alarm list layout only
 2. Display tile layout only
 3. Display tile and alarm/event list combination
 4. ALPR map and alarm/event list combination
- I. User workspace customization
1. The user shall have full control over the user workspace through a variety of user-selectable customization options. Administrators shall also be able to limit what users and operators can modify in their workspace through privileges.
 2. Once customized, the user shall be able to save their workspace.
 3. The user workspace shall be accessible by a specific user from any client application on the network.
 4. Display tile patterns shall be customizable.
 5. Event or alarm lists shall span anywhere from a portion of the screen up to the entire screen and shall be resizable by the user. The length of event or alarm lists shall be user-defined. Scroll bars shall enable the user to navigate through lengthy lists of events and alarms.
 6. The Monitoring UI shall support multiple display tile patterns (e.g. 1 display tile (1x1 matrix), 16 tiles (8x8 matrix), and multiple additional variations).
 7. The Monitoring UI shall support as many monitors as the PC video adapters and Windows Operating System (or equivalent operating system) are capable of accepting.
 8. Additional customization options include: show/hide window panes, show/hide menus/toolbars, show/hide overlaid information on video, resize different window panes, and choice of tile display pattern on a per task basis.
- J. The Monitoring UI shall provide an interface to support the following tasks and activities common to access control, ALPR, and video:
1. Monitoring the events from a live security system (ACS and/or VMS and/or ALPR).
 2. Generating reports, including custom reports.
 3. Monitoring and acknowledging alarms.
 4. Creating and editing incidents and generating incident reports.
 5. Displaying dynamic graphical maps and floor plans, as well as executing actions from dynamic graphical maps and floor plans.
 6. Management and execution of hot actions and macros.
- K. The Monitoring UI shall be able to monitor the activity of the following entities in real-time: areas, ALPR entities, doors, elevators, cameras, cardholders, cardholder groups, zones (input points), and more. The Monitoring UI shall provide an interface to support the following access control tasks and capabilities:
1. Monitoring and management of access events and alarms.
 2. Viewing of cardholder picture or badge IDs.
 3. Verification of cardholder picture IDs against live video.
 4. Visitor management.

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5. People counting or mustering, including resetting the people count in an area.
6. Door control, including remotely unlocking doors, overriding a door's unlocking schedules, and enabling door maintenance mode.
7. Forgiving antipassback.
8. Generation of ACS configuration and activity reports.
9. Viewing of HTML files including alarm instructions.

L. Entity Monitoring

1. The USP shall permit the user to select multiple entities to monitor from the Monitoring UI by adding the entities one by one to the tracking list.
2. The Monitoring UI shall provide the option to filter which events shall be displayed in the display tile layout, event list layout, or both.
3. It shall be possible to lock a Monitoring UI display tile so that it only tracks the activity of a specific entity (for example, a specific door or camera).
4. The user shall be able to drag and drop an event from an event list (or an alarm from an alarm list) onto a display tile to view a license plate read, cardholder picture ID, badge ID, or live/archived video, among other options.
5. Event, alarm, monitoring/tracking, and report lists shall contain cardholder pictures where applicable.
6. The user shall be permitted to start or pause the viewing of events within each display tile.

M. Display Tile Packing and Unpacking

1. The Monitoring UI shall support single-click unpacking and packing for, areas, doors, zones, and alarms.
2. The packing and unpacking of entities shall allow operators to quickly obtain additional information and camera views of a specific entity.
3. The unpacking of an entity shall display associated entities. For example, unpacking a door with multiple associated cameras shall display all cameras associated with that door. Unpacking shall reconfigure the display tiles to be able to display all associated entities. For example, unpacking a door (or a zone or alarm) that is currently in a 1 x 1 tile configuration and that has 3 cameras tied to it will create a 1 x 3 display tile arrangement for viewing all associated entities.
4. Packing will return the display to the original tile pattern.

- N. The following additional tools or utilities shall be available from the Monitoring UI: create credentials, create cardholders, and access control troubleshooter.

2.23 SERVER (OR EQUIVALENT APPLIANCE / SYSTEM) ADMINISTRATOR USER INTERFACE REQUIREMENTS

- A. The Server (or equivalent appliance / system) Administrator shall be used to configure the SSM and the Directory Role (or equivalent system) (main configuration) and its database(s), to apply the license, and more.
- B. The Server (or equivalent appliance / system) Administrator shall be a web-based application. Through the Server (or equivalent appliance / system) Administrator, it shall be possible to access the SSM across the network or locally on the server (or equivalent appliance / system).
- C. Access to the Server (or equivalent appliance / system) Administrator shall be protected via login

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name, password, and encrypted communications.

- D. The Server (or equivalent appliance / system) Administrator shall allow the administrator (user) to perform the following functions:
 - 1. Manage the system license.
 - 2. Configure the database(s) and database server (or equivalent appliance / system) for the Directory Role (or equivalent system).
 - 3. Activate/Deactivate the Directory Role (or equivalent system).
 - 4. Manually back up the Directory Role (or equivalent system) database(s) and/or restore the server (or equivalent appliance / system) database(s), as well as configure scheduled backups of the databases.
 - 5. Define the client-to-server (or equivalent appliance / system) communications security settings.
 - 6. Configure the network communications hardware, including connection addresses and ports.

2.24 UNIFIED WEB CLIENT (UWC) GENERAL REQUIREMENTS

- A. The USP shall support a unified web client (UWC) for access control, video, and automatic license plate recognition (ALPR).
- B. The UWC shall be a truly thin client with no download required other than an internet web browser or standard web browser plugins.
- C. The UWC shall be platform independent and run within Microsoft Internet Explorer, Firefox, Safari, and Google Chrome.
- D. The UWC shall be designed as an HTML5 application.
- E. The UWC shall support display on tablet format.
- F. The UWC will support native H.264 video in the web client.
- G. Web pages for the web client shall be managed and pushed by the Web Client Server (or equivalent appliance / system). Microsoft IIS or any other web hosting service shall not be required given that all the web pages shall be hosted by the Mobile Server (or equivalent appliance / system).
- H. The Web Client Server (or equivalent appliance / system) shall provide the ability to define a unique URL to access the web client, to ensure the security of the application.
- I. The UWC shall provide the ability to configure, save, and reload camera layouts.
- J. The UWC shall provide the ability to control PTZ cameras.
- K. Functionalities:
 - 1. Log in using name and password or Active Directory support shall be available. (Specifier, Professional and up, additional license required for Active Directory)
 - 2. Ability for user to change its password.
 - 3. Encrypted communications for all transactions.
 - 4. Print reports and export to CSV file.
 - 5. Access Control.

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- a. Cardholder and group (add/modify/delete)
 - b. Credential management (modify/delete)
 - c. Visitor management (check-in/modify/check-out)
 - d. Unlock door
 - e. Override the unlocking schedule on a door
 - f. Door Activities report
6. Alarms.
- a. Alarm report
7. Threat Level management.
8. Automatic License Plate Recognition (ALPR).
- a. Live monitoring of the ALPR cameras
 - b. ALPR reads and hits report
 - c. Addition of plate numbers to hotlists

2.25 SMARTPHONE AND TABLET APP GENERAL REQUIREMENTS

- A. The USP shall support mobile apps for various off-the-shelf devices. The mobile apps shall communicate with the USP over any Wi-Fi or cellular network connection.
- B. Mobile apps shall communicate with the USP via a Mobile Server (or equivalent appliance /system) Role (MSR). All communication between the mobile apps and MSR shall be based on standard TCP/IP protocol and shall use the TLS encryption with digital certificates to secure the communication channel.
- C. Supported device manufacturers shall include (refer to Mobile App specifications for latest compatibility list):
1. Apple devices running iOS 11.0 or later
 2. Android devices 6.0 or later
- D. It shall be possible to download the mobile apps from the Central application store (Apple iTunes App Store, Google Play Store, etc.).
- E. Functionalities
1. Core
 - a. Ability to logon/logoff the UPS using an authorized use profile of the system.
 - b. Ability to change the picture or the password of the user of the mobile app.
 - c. Ability to view the current Threat Level of the system.
 - d. Ability to change the current Threat Level of the system.
 - e. Ability to execute hot actions configured in the user profile.
 - f. Ability to view entities from the USP:
 - 1) Cameras
 - 2) Doors
 - 3) ALPR cameras
 - 4) Web Tile Plugins
 - 5) Layouts
 - 6) Camera Sequences
 - 7) Macros
 - 8) Maps (geographical maps only)
 - g. Ability to navigate the system hierarchical view of the entities and search entities in the system.

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2. Video
 - a. Ability to view live and recorded video from the cameras of the USP. A maximum of four cameras shall be displayed.
 - b. Ability to display live and recorded video side-by-side for a specific camera.
 - c. Ability to perform digital zoom on cameras.
 - d. Ability to perform actions on cameras, such as add a bookmark, control a PTZ, control the iris/focus function, save a snapshot, and start/stop recording.
 - e. Ability to view camera layouts.
 - f. Ability to view camera sequences.
 - g. Ability to run a camera events report.
 - h. Ability to change the video quality on the cameras displayed on the mobile app.
 - i. Ability to use the camera of the smartphone and stream a live video feed to a video recorder in the system
3. Access Control
 - a. Ability to view the door state and the door lock state.
 - b. Ability to perform actions on a door such as unlock the door, set the door in maintenance mode, and override the door unlocking schedule.
4. Automatic License Plate Recognition
 - a. Ability to view live events raised by an ALPR camera.
 - b. Ability to view the read image, context image, and all metadata captured by the ALPR camera.
 - c. Ability to run an ALPR event report.
 - d. Ability to add a license plate to a hotlist on the system.
5. Alarm Management
 - a. Ability to receive push notifications to notify mobile operators that an alarm was received.
 - b. Ability to view all active alarms assigned to the mobile operator.
 - c. Ability to perform action on an alarm such as acknowledge, forward, or alternate-acknowledge an active alarm.
 - d. Ability to view entities attached to the alarm.
6. Map (Specifier, additional license required, Plan Manager Advanced)
 - a. Ability to display a geographical map with USP entities geo-located on the map.
 - b. Ability to view any entity configured on the map.
 - c. Ability to search for entities or locations on the map.

- F. It shall be possible to send a message from the client user interface to a mobile operator.
- G. It shall be possible to send a live or playback video sequence from the client UI to a mobile operator.
- H. It shall be possible to view mobile operators who enabled location tracking on a map in the system. The location of the mobile operator should be updated in real time.

2.26 HEALTH MONITOR

- A. The USP shall monitor the health of the system, log health-related events, and calculate statistics.
- B. USP services, roles, agents, units, and client apps will trigger health events.
- C. The USP shall populate the Windows Event Log with health events related to USP roles, services,

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and client apps.

- D. A dedicated role, the Health Monitoring Role, shall perform the following actions:
 - 1. Monitor the health of the entire system and log events.
 - 2. Calculate statistics within a specified time frame (hours, days, months).
 - 3. Calculates availability for clients, server (or equivalent appliance / system)s and
 - 4. video/access/ALPR units.
- E. A Health Monitoring task and Health History reporting task shall be available for live and historical reporting.
- F. A Health Monitoring dashboard task shall be available in the client application user interface to provide a live display, such as pie charts and event lists, for quick visual assessment on the general health of the system.
- G. A web-based, centralized health dashboard shall be available to remotely view unit and role health events of the USP.
- H. Detailed system care statistics will be available through a web-based dashboard providing health metrics of USP entities and roles, including Uptime and mean-time-between-failures.
- I. All health events raised in the system can be used for automating the USP event/action management.
- J. Health events shall be accessible via the SDK (can be used to create SNMP traps).
- K. The UMS should support integration with a guest management system to allow temporary building access to authorized guests.

2.27 USP GENERAL REQUIEMENTS

- A. The Unified Security Platform (USP) shall be an enterprise class IP-enabled security and safety software solution.
- B. The USP shall support the seamless unification of IP access control system (ACS), IP video management system (VMS), and IP automatic license plate recognition system (ALPR) under a single platform. The USP user interface (UI) applications shall present a unified security interface for the management, configuration, monitoring, and reporting of embedded ACS, VMS and ALPR systems, and associated edge devices.
- C. Functionalities available with the USP shall include:
 - 1. Configuration of embedded systems, such as ACS, ALPR, and VMS systems.
 - 2. Live event monitoring.
 - 3. Live video monitoring and playback of archived video.
 - 4. Alarm management.
 - 5. Reporting, including creating custom report templates and incident reports.
 - 6. Global cardholder management across multiple facilities and geographic areas each with their own independent ACS system.
 - 7. Microsoft Active Directory integration for synchronizing USP user accounts and ACS

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- cardholder accounts.
 - 8. Intrusion device and panel integration (live monitoring, reporting, and arming/disarming).(Specifier, Professional and up, additional license required) (OPTIONAL).
 - 9. SIP Intercom device integration for bi-directional communication
 - 10. Integration with third party systems and databases via plug-ins (access control, video analytics, point of sale, and more).
 - 11. Dynamic graphical map viewing.
 - 12. Asset management system integration.
- D. The USP shall be deployed in one or more of the following types of installations:
- 1. Unified access, ALPR, video platform, and any combination thereof.
 - 2. Standalone access control, video, or ALPR platform.
 - 3. Unified access and video platform that federates multiple remote ACS, VMS, and ALPR. Standalone access control that federates multiple independent remote ACS.
- E. Licensing:
- 1. A single central license shall be applied centrally on the configuration server (or equivalent appliance / system).
 - 2. There shall be no requirement to apply a license at every server (or equivalent appliance / system) computer or client workstation.
 - 3. Based on selected options, one or more embedded systems shall be enabled or disabled.
- F. Hardware and Software Requirements:
- 1. The USP and embedded systems (video, license plate recognition, and access control) shall be designed to run on a standard PC-based platform loaded with a Windows operating system (or equivalent operating system). The preferred operating system shall be coordinated with the Owner following the manufacturer supported operating systems.
- G. Server (or equivalent appliance / system) Monitoring Service (Watchdog):
- 1. The USP shall include a Server (or equivalent appliance / system) Monitoring Service that continuously monitors the state of the Server (or equivalent appliance / system) Software Module (SSM) service.
 - 2. The Server (or equivalent appliance / system) Monitoring Service shall be a Windows service that automatically launches at system startup, regardless of whether or not a user is logged into his account.
 - 3. The Server (or equivalent appliance / system) Monitoring Service shall be installed on all PCs/server (or equivalent appliance / system)s running an SSM. In the event of a malfunction or failure, the Server (or equivalent appliance / system) Monitoring Service shall restart the failed service. As a last resort, the Server (or equivalent appliance /system) Monitoring Service shall reboot the PC/server (or equivalent appliance / system) should it be unable to restart the service.

2.28 USP ACCESS CONTROL, VIDEO, and ALPR UNIFICATION

- A. The Monitoring UI shall present a true Unified Security Interface for live monitoring and reporting of the ACS, VMS, and ALPR. Advanced live video viewing and playback of archived video shall be available through the Monitoring UI.
- B. The Configuration UI shall present a true Unified Security Interface for the configuration and

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management of the ACS, VMS, and ALPR.

- C. The user shall be able to associate one or more video cameras to the following entity types: areas, doors, elevators, zones, alarms, intrusion panels, ALPR cameras, and more.
- D. It shall be possible to view video associated to access control events when viewing a report.
- E. It shall be possible to view video associated to intrusion panel events when viewing a report.
- F. It shall be possible to view video associated to ALPR events when viewing a report.

2.29 USP ALARM MANAGEMENT

- A. The USP shall support the following Alarm Management functionality:
 - 1. Create and modify user-defined alarms. An unrestricted number of user-defined alarms shall be supported.
 - 2. Assign a time schedule or a coverage period to an alarm. An alarm shall be triggered only if it is a valid alarm for the current time period.
 - 3. Set the priority level of an alarm and its reactivation threshold.
 - 4. Define whether to display live or recorded video, still frames or a mix once the alarm is triggered.
 - 5. Provide the ability to display live and recorded video within the same video tile using picture-in-picture (PiP) mode.
 - 6. Provide the ability to group alarms by source and by type.
 - 7. Define the time period after which the alarm is automatically acknowledged.
 - 8. Define the recipients of an alarm. Alarm notifications shall be routed to one or more recipients. Recipients shall be assigned a priority level that prioritizes the order of reception of an alarm.
 - 9. Define the alarm broadcast mode. Alarm notifications shall be sent using either a sequential or an all-at-once broadcast mode.
 - 10. Define whether to display the source of the alarm, one or more entities, or an HTML page.
 - 11. Specify whether an incident report is mandatory during acknowledgment.
- B. The workflows to create, modify, add instructions and procedures, and acknowledge an alarm shall be consistent for access control, ALPR, and video alarms.
- C. Alarms shall be federated, allowing global alarm management across multiple independent USP, ACS, and VMS systems.
- D. The USP shall also support alarm notification to an email address or any device using the SMTP protocol.
- E. The ability to create alarm-related instructions shall be supported through the display of one or more HTML pages following an alarm event. The HTML pages shall be user-defined and can be interlinked.
- F. Alarm unpacking and packing shall be supported where all the entities associated to an alarm can be display in the Monitoring UI with the single click of a button.

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- G. The user shall have the ability to acknowledge alarms, create an incident upon alarm acknowledgement, and put an alarm to snooze.
- H. The user shall be able to spontaneously trigger alarms based on something he or she sees in the system.
- I. An alarm shall be configured in such a way that it remains visible until the source condition has been acknowledged.
- J. The user shall be able to investigate an alarm without acknowledging it.

2.30 USP THREAT LEVELS

- A. The USP shall support Threat Levels to dynamically change the system behavior to respond to critical events.
- B. Threat Levels shall be activated and deactivated by the CSA operator with the right privilege.
- C. Threat Levels shall be set on an area or on the entire system.
- D. Threat Levels shall affect the system behavior by executing any action available in the USP such as: trigger output, start recording, block camera, override recording quality, arm zone, set a door in maintenance mode, and more.
- E. The following specific actions shall be available with Threat Level:
 - 1. Set minimum security clearance to restrict or permit access to cardholders on specific areas on top of the restrictions imposed by the access rules.
 - 2. Set minimum user level to automatically log out user from the USP.
 - 3. Set reader mode to change how the doors are accessed (for example card and PIN, or card or PIN).
- F. A visible notification shall be displayed in all operator CSA when a Threat Level is activated.

2.31 USP ADVANCED TASK MANAGEMENT

- A. USP shall support an infrastructure for managing Monitoring UI tasks used for live monitoring, day-to-day activities, and reporting.
- B. Administrators shall be able to assign tasks and lock the operator's workspace. The user management of their workspace shall be limited by their assigned privileges.
- C. Operators shall be able save their tasks as either Public tasks or Private tasks and in a specific partition. Public tasks shall be available to all users. Private tasks shall only be available to the owner of the task.
- D. Operators shall be able to share their tasks by sending them to one or more online users. Recipients shall have the option to accept the sent task.

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- E. Operators shall be able to duplicate a task.

2.32 USP REPORTING

- A. The USP shall support report generation (database reporting) for access control, ALPR, video, and intrusion.
- B. Each and every report in the system shall be a USP task, each associated with its own privilege. A user shall have access to a specific report task if they have the appropriate privilege.
- C. The workflows to create, modify, and run a report shall be consistent for access control, ALPR, and video reports.
- D. Reports shall be federated, allowing global consolidated reporting across multiple independent USP, ACS, VMS, and ALPR systems.
- E. Access control and ALPR reports shall support cardholder pictures and license plate pictures, respectively.
- F. The USP shall support the following types of reports:
 - 1. Alarm reports
 - 2. Video-specific reports (archive, bookmark, motion, and more)
 - 3. Configuration reports (cardholders, credentials, units, access rules, readers/inputs/outputs, and more)
 - 4. Activity reports (cardholder, cardholder group, visitor, credential, door, unit, area, zone, elevator, and more)
 - 5. ALPR-specific reports (mobile ALPR playback, hits, plate reads, reads/hits per day, reads/hits per ALPR zone, and more)
 - 7. Health activity and health statistics reports
 - 8. Other types of reports, including visitor reports, audit trail reports, incident reports, and time and attendance reports
- G. Generic Reports, Custom Reports and Report Templates:
 - 1. The user shall have the option of generating generic reports from an existing list, generating reports from a list of user-defined templates, or creating a new report or report template.
 - 2. The user shall be able to customize the predefined reports and save them as new report templates. There shall be no need for an external reporting tool to create custom reports and report templates. Customization options shall include setting filters, report lengths, and timeout period. The user shall also be able to set which columns shall be visible in a report. The sorting of reported data shall be available by clicking on the appropriate column and selecting a sort order (ascending or descending).
 - 3. All report templates shall be created within the Monitoring UI.
 - 4. These templates can be used to generate reports on a schedule in PDF or Excel formats.
 - 5. An unrestricted number of custom reports and templates shall be supported.
- H. A reporting task layout shall consist of panes with settings (report length, filters, go and reset commands, etc.), the actual report data in column format, and a pane with display tiles. The user shall be able to drag and drop individual records in a report onto one or more display tiles to view a cardholder's picture ID, playback a video sequence, or an ALPR event.

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- I. The USP shall support comprehensive data filtering for most reports based on entity type, event type, event timestamp, custom fields, and more.
- J. The reporting task shall have the ability to display results through graphics such as line charts, bar charts, stacked bar charts, doughnut charts, and pie charts.
- K. The user shall be able to click on an entity within an existing report to generate additional reports from the Monitoring UI.
- L. The USP shall support the following actions on a report: print report, export report to a PDF/Microsoft Excel/CSV file, export the graphics chart in JPG/PNG, and automatically email a report based on a schedule and a list of one or more recipients.

2.33 USP Dashboards

- A. The USP shall support the ability to create dashboards.
- B. Operators shall be allowed to view dashboards if they are granted the appropriate privilege. Modification to the dashboards should also be allowed to users granted the appropriate privilege.
- C. Dashboards in the system shall be a USP task. A user shall have access to a specific dashboard task if they have the appropriate privilege.
- D. Dashboards shall be sharded either in a private folder or a public folder.
- E. A dashboard shall consist of a canvas with various widgets displayed on the canvas. All widgets should offer the ability to specify location and size to the widget, a title to the widget, a background color to the widget, and the ability to refresh periodically the content of the widget.
- F. Dashboard widget types shall be:
 - 1. Image: provides the ability to display an image (JPG, PNG, GIF, BMP) on a dashboard.
 - 2. Text: provides the ability to display a text on a dashboard. The text style shall be configurable, so font, size, color, and alignment can be specified by the user.
 - 3. Tile: provides the ability to display any entity of the USP inside of a tile.
 - 4. Web page: provides the ability to display a URL on a dashboard.
 - 5. Entity Count: provides the ability to display the total number of a specific entity type in the USP.
 - 6. Reports: provides the ability to display the results of any saved reports in the system. The results shall be displayed either by showing the total number of results in the report, a set of top results from the report, or a visual graph from the data returned by the report.
- G. It shall be possible to extend the widgets of a dashboard using the SDK. This will provide the ability to develop custom widgets to the system.
- H. The USP shall support the following actions on a dashboard: print dashboard, export dashboard to PNG file, and automatically email a report based on a schedule and a list of one or more recipients.

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2.34 USP feature: Monitoring of Remote Systems

- A. The USP shall support the concept of a Remote monitoring feature for access control, video, and ALPR.
- B. The Remote monitoring feature shall allow multiple independent USP systems (Federated systems) to be unified into a larger virtual system (the Remote monitoring feature). This shall facilitate the global monitoring of multiple independent USP systems.
- C. The Remote monitoring feature shall support the unification of multiple independent video surveillance systems or VMS.
- D. The Remote monitoring feature shall support the unification of multiple independent access control systems or ACS.
- E. The Remote monitoring feature shall support the unification of multiple independent license plate recognition systems or ALPR.
- F. Entities that shall federated and monitored centrally from the Remote monitoring feature shall include: alarms, areas, cameras, cardholders and cardholder groups, credentials, doors, elevators, ALPR events, and zones (monitored inputs).
- G. The Remote monitoring feature shall support a cloud-based deployment, whereby the service and infrastructure will be updated automatically and provisioned by the service provider, without need for on-site hardware.
- H. The Remote monitoring feature shall support Global Alarm Management from the Monitoring UI or access control, video, and ALPR.
- I. The Remote monitoring feature shall support Global Report Generation from the Monitoring UI for access control, video, and ALPR.
- J. The Remote monitoring feature shall support dozens of operator actions on remote (federated) entities from the Monitoring UI (for example generating a global report taking into account events from multiple independent sites or acknowledging remote alarms).

2.35 USP ZONE MANAGEMENT

- A. The USP shall support the configuration and management of zones for input point monitoring via the Zone Manager Role. A user shall be able to add, delete, or modify a zone if they have the appropriate privileges.
- B. A zone shall monitor the status of one or more inputs points. Zone monitoring or input point monitoring shall be possible through the use of a controller and one or more input modules. Inputs from video cameras or video encoders shall also be accessible via a zone.
- C. Depending on the hardware installed, supervised inputs shall be supported. Depending on the input module used, both 3-state and 4-state supervision shall be available.

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- D. A schedule shall be defined for a zone, indicating when the zone will be monitored.
- E. Custom Events shall provide full flexibility in creating custom events tailored to a zone. Users shall be able to associate custom events to state changes in monitored inputs.
- F. The ACS shall support one or more cameras per zone. Video shall then be associated to zone state changes.
- G. Input/Output (IO) Linking
 1. Zone management shall support Input/Output (IO) Linking. I/O Linking shall allow one or more inputs to trigger one or more outputs.
 2. I/O Linking shall be available in offline mode when communication between the server (or equivalent appliance / system) and hardware is not available.
 3. Custom Output Behaviors shall provide full flexibility in creating a variety of complex output signal patterns: simple pulses, periodic pulses, variable duty-cycle pulses, and state changes.
 4. Through the “trigger an output” action, the ACS shall support the triggering of outputs with custom output behaviors.

2.36 USP USER AND USER GROUP SECURITY, PARTITIONS, and PRIVILEGES MANAGEMENT

- A. The USP shall support the configuration and management of users and user groups. A user shall be able to add, delete, or modify a user or user group if they have the appropriate privileges.
- B. The USP shall support user authentication with claims-based authentication using external providers. External providers shall include:
 1. ADFS (Active Directory Remote monitoring Services)
- C. Common access rights and privileges shared by multiple users shall be defined as User Groups. Individual group members shall inherit the rights and privileges from their parent user groups. User group nesting shall be allowed.
- D. User privileges shall be extensive in the USP. All configurable entities for the USP, including access control, video, and ALPR shall have associated privileges.
- E. Specific entities, such as cardholders, cardholder groups, and credentials shall include a more granular set of privileges, such as the right to access custom fields and change the activation or profile status of an entity.
- F. Partitions:
 1. The USP shall limit what users can view in the configuration database via security partitions (database segments). The administrator, who has all rights and privileges, shall be allowed to segment a system into multiple security partitions.
 2. All entities that are part of the USP can be assigned to one or more partitions.
 3. A user who is given access to a specific partition shall only be able to view entities
 4. (components) within the partition to which they have been assigned. Access is given by assigning the user as an accepted user to view the entities that are members of a particular partition.
 5. A user or user group can be assigned administrator rights over the partition.

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- G. It shall be possible to specify user and user group privileges on a per partition basis.
- H. Advanced logon options shall be available such as dual logon and more.
- I. It shall be possible to specify an inactive period for the Monitoring UI after which time the application shall automatically lock, while still preserving access to currently displayed camera feeds.
- J. It shall be possible to review used permissions and determine:
 - 1. For any entity in the system, which user group or user can view or modify it.
 - 2. For any user group or user in the system, what are its privileges.
 - 3. For any privilege in the system, which used group or user is allowed to perform the underlying action.

2.37 USP EVENT/ACTION MANAGEMENT

- A. The USP shall support the configuration and management of events for video and ALPR. A user shall be able to add, delete, or modify an action tied to an event if he has the appropriate privileges.
- B. The USP shall receive all incoming events from one or more ACS, VMS, and/or ALPR. The USP shall take the appropriate actions based on user-define event/action relationships.
- C. The USP shall receive and log the following events:
 - 1. System-wide events
 - 2. Application events (clients and server (or equivalent appliance / system)s)
 - 3. Area, camera, door, elevator, and ALPR events (reads and hits)
 - 4. Cardholder and credential events
 - 5. Unit events
 - 6. Zone events
 - 7. Alarm events
 - 8. ALPR events
 - 9. First Person In and Last Person Out events and Anti-Passback events
 - 10. Intrusion events
 - 11. Asset management events
 - 12. Health monitoring events.
- D. The USP shall allow the creation of custom events.
- E. The USP shall have the capability to execute an action in response to an access control, video, and ALPR event.
- F. The USP shall allow a schedule to be associated with an action. The action shall be executed only if it is an appropriate action for the current time period.

2.38 USP SCHEDULES AND SCHEDULED TASKS

- A. Schedules
 - 1. The USP shall support the configuration and management of complex schedules. A user

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- shall be able to add, delete, or modify a schedule if they have the appropriate privileges.
 - 2. The USP shall provide full flexibility and granularity in creating a schedule. The user shall be able to define a schedule in 1-minute or 15-minute increments.
 - 3. Daily, weekly, ordinal, and specific schedules shall be supported.
- B. Scheduled Tasks
- 1. The USP shall support scheduled tasks for access control, video, and ALPR.
 - 2. Scheduled tasks shall be executed on a user-defined schedule at a specific day and time. Recurring or periodic scheduled tasks shall also be supported.
 - 3. Scheduled tasks shall support all standard actions available within the USP, such as sending an email or emailing a report.

2.39 USP MACROS AND CUSTOM SCRIPTS

- A. The USP shall enable users to automate and extend the functionalities of the system through the use of macros or custom scripts for access control, video, and ALPR.
- B. Custom macros shall be created with the USP Software Development Kit (SDK).
- C. A macro shall be executed either automatically or manually.
- D. In the Monitoring UI, a macro shall be launched through hot actions.

2.40 USP DYNAMIC GRAPHICAL MAPS (DGM)

- A. The USP shall support mapping functionality for access control, video surveillance, intrusion detection, ALPR, and external applications.
- B. The USP shall provide a map centric interface with the ability to command and control all the USP capabilities from a full screen map interface.
- C. It shall be possible to span the map over all screens of the USP client station. In the scenario where the map is spanned over all the screens of the USP client station it shall be possible to navigate the map including pan and zoom, and the map's moves shall be synchronized between all screens. Spanning the map over multiple screen must provide the same command and control capabilities than in a single screen display.
- D. The DGM shall support the following file format and protocol for importing map background:
 - 1. PDF
 - 2. JPG
 - 3. PNG
 - 4. Web Tile Map Service (WMTS) and Web Map Service (WMS) defined by the Open Geospatial Consortium (OGC)
 - 5. BeNomad
 - 6. AutoCAD (DWG & DXF)
 - 7. Or equivalent format.
- E. The DGM shall provide the following online map providers for use as map background and provide

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- the ability to manage their service license if they require one:
1. Google Maps, aerial, terrain (Licensed)
 2. Bing Maps, aerial, satellite, hybrid (Licensed)
 3. ESRI ArcGIS (Licensed)
 4. OpenStreet Map aerial (Licensed)
 5. OVI hybrid
 6. Or equivalent format.
- F. It shall be possible to configure a mixed set of maps made of GIS, online providers and private imported files and link them together.
- G. The DGM shall provide the ability to display all native entities of the USP including:
1. Cameras, fix, and PTZ
 2. Doors
 3. Camera sequences
 4. Areas
 5. Intrusion areas
 6. Intrusion zones
 7. License Plate Recognition cameras
 8. Digital inputs
 9. Digital outputs
 10. Intercoms
 11. Alarms
 12. Macros
 13. Police Car Patrollers
- H. The DGM shall provide the ability to draw and display information over the map in the form of:
1. Vectoral shapes: line, rectangles, polygons, ellipse
 2. Pictures
 3. Text
- I. The DGM shall provide the ability to display any type of third-party entities integrated through an SDK.
- J. The DGM shall provide the ability to display layer of information in Keyhole Markup Language (KML) format.
- K. The DGM shall provide the ability to the operator to manage layers of entities displayed over the map, being able to turn them on and off and changing the superposition order.
- L. The DGM shall provide the ability to import data layers from one or more ESRI ArcGIS server (or equivalent appliance / system)s.
- M. The DGM shall provide the operators with the ability to manage layers that are imported from ESRI ArcGIS. The operators shall be able to turn the layers on and off, as well as sort the layers.
- N. The DGM shall offer built-in map data backup and restore for both map backgrounds and layers of entities.
- O. The DGM shall offer failover capabilities.

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- P. The DGM shall scale up to several thousands of entities on a single map and hundreds of maps.
- Q. The DGM shall provide a means to update a map background without affecting the map object configuration.
- R. The DGM shall offer a user-friendly graphical map designer to configure the maps.
- S. The DGM shall provide user friendly and intuitive navigation that includes:
 - 1. The ability to create hierarchies of maps to facilitate navigation within and between various sites and buildings.
 - 2. The ability to define favorites for recurrent position recall.
 - 3. The possibility to create links between maps. The map links shall allow the link from one map to multiple maps representing the floors of a building. Navigating between floors of a building shall keep the level of the map.
 - 4. A common user experience regarding navigation into the map for both GIS and private maps.
- T. It shall be possible to monitor the state of entities on the map. It shall be possible to customize the icons of any entities represented on the map.
- U. The DGM shall offer the ability to optionally set a graphical display notification of the motion detection.
- V. The DGM shall offer a smart selection tool to access the video. By clicking the location, the user wants to see, the DGM will automatically select the cameras that can see this location and move the PTZ towards that location. This smart selection tool shall take obstacles into consideration and not display cameras that cannot see the location because of a wall.
- W. It shall be possible to select a location by drawing a zone of interest on the DGM, and to display all the entities that are part of that zone of interest at once.
- X. The user shall be able to select and display the content of multiple USP entities on the map in pop-up windows.
- Y. The user shall be able to move, resize, and pin the USP entity pop-up windows to the map.
- Z. It shall be possible to access live and playback video from the map.
- AA. It shall be possible to monitor all entity event notifications from the DGM. Users shall be able to turn notifications on and off per entity.
- BB. The DGM shall offer the ability to fully operate alarm monitoring. It shall be possible to:
 - 1. Center the map on entities related to the alarm.
 - 2. Visualize the Alarm notifications on the map and access the related videos from the map.
 - 3. Trigger and receive alarms.
 - 4. Act on the alarm from the DGM, including acknowledgements, forwarding, and investigation.
 - 5. Visualize that an alarm occurred in an underlying linked map.
- CC. The DGM shall provide the following search capabilities:
 - 1. Search and center by entity name.

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2. From the Display of an entity in the USP, locate the entity on the map and offer the ability to select another one close-by.
- DD. Any update of map content by an administrator shall be immediately and dynamically pushed to all DGM users.
- EE. The DGM shall support the use of GIS maps or private maps or a combination of both for map background.
- FF. The DGM shall be compatible with any GIS compliant maps with the OGC and supporting WMTS and WMS. This includes, but is not limited to, ESRI maps. The DGM shall allow the selection of the appropriate GIS layers.
- GG. The DGM shall provide an intuitive built-in map designer for entity positioning on the map using drag and drop. Any configuration shall be graphic.
- HH. It shall be possible to edit and configure multiple map objects at once.
- II. All map design modifications shall be logged in an audit trail.
- JJ. Various actions shall be available within maps for execution through simple and intuitive double-click, right-click, or drag-and-drop functionality. Examples of actions available through maps shall include unlocking a door and acknowledging an alarm.
- KK. Through the following functionality, the DGM shall allow the management of USP alarms from the map.
 1. Locate on the map entities related to the alarm.
 2. Display entities of the alarm with a specific icon, color, transparency level, and blinking rate.
 3. List, select, and locate alarms.
 4. Auto center the map on the highest priority alarm.
 5. Handle the alarm from the map, including acknowledgement, forwarding, and investigation.
 6. All map containers, such as hotspots or map links shall reflect the alarm status of the contained entities.
- LL. It shall be possible to add advanced functionality to maps object using the SDK. Any functionality available through the USP SDK shall be available within maps.
- MM. The DGM shall offer lasso tools for:
 1. Displaying entities at one location through a single action.
 2. Triggering an action on all entities at one a location in a single click.
 3. Editing multiple entities at one location simultaneously.
- NN. The DGM shall allow the display of USP entities selected from the map on a remote monitor (video wall).
- OO. The DGM shall provide the ability to search within the map by entity name.
- PP. The DGM shall allow the use of KML overlay map information for both GIS and private maps. Movable objects shall be supported using KML.
- QQ. The Contractor shall provide licenses for each entity that is required to be shown on the graphical

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maps.

2.41 USP AUDIT AND USER ACTIVITY TRAILSs (LOGS)

- A. The USP shall support the generation of audit trails. Audit trails shall consist of logs of operator/administrator additions, deletions, and modifications.
- B. Audit trails shall be generated as reports. They shall be able to track changes made within specific time periods. Querying on specific users, changes, affected entities, and time periods shall also be possible.
- C. For entity configuration changes, the audit trail report shall include detailed information of the value before and after the changes.
- D. The USP shall support the generation of user activity trails. User activity trails shall consist of logs of operator activity on the USP such as login, camera viewed, ALPR event viewed, badge printing, video export, and more.
- E. The ACS shall support the following actions on an audit and activity trail report: print report and export report to a PDF/ Microsoft Excel/CSV file.

2.42 USP INCEDENT REPORTS

- A. Incident reports shall allow the security operator to create reports on incidents that occurred during a shift. Both video-related and access control-related incident reports shall be supported.
- B. The operator shall be able to create standalone incident reports or incident reports tied to alarms.
- C. The operator shall be able to link multiple video sequences to an incident, access them in an incident report, and change the date or time of the sequences later on.
- D. It shall be possible to create a list of Incident categories, tag a category to an incident, and filter the search with the category as a parameter.
- E. Incident reports shall allow the creation of a custom form on which to input information on an incident.
- F. Incident reports shall allow entities, events, and alarms to be added to support at the report's conclusions.
- G. Incident reports shall allow the use of a custom logo, the default Mission Control logo or no logo at all.

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2.43 USP SOFTWARE DEVELOPMENT KIT (SDK)

- A. A USP SDK shall be available to support custom development for the platform.
- B. The SDK shall include functionalities specific to the embedded automatic license plate recognition (ALPR), access control (ACS), and video (VMS) systems.
- C. Integration with external applications and databases shall be possible with the SDK.
- D. The SDK shall support an API to allow third party access control hardware integration.
- E. The SDK shall enable end-users to develop new functionality (user interface, standalone applications, or services) to link the USP to third party business systems and applications such as Badging Systems, Human Resources Management Systems (HRMS), and Enterprise Resource Planning (ERP) systems.
- F. The SDK shall be based on the .NET framework.
- G. The SDK shall support dynamic or transactional updates to the USP configuration. It shall also support change notification of USP entity configuration.
- H. The SDK shall provide an extensive list of programming functions to view and/or configure core entities such as: users and user groups, alarms, custom events, schedules, and more.
- I. The SDK shall provide an extensive list of programming functions to view and configure ACS, VMS, and ALPR.
- J. The SDK shall provide an extensive list of programming functions to view and configure most ACS entities such as cardholders, cardholder groups, visitors, credentials, access rules (modify only), and custom fields.
- K. The SDK shall be able to receive real time events from the following USP entities: users and user groups, areas, zones, cameras, video units, doors, door controllers (units), elevators, cardholders, cardholder groups, and credentials.
- L. The SDK shall be able to query the history of events for areas, cameras, zones, alarms, cardholders, credentials, visitors, doors, query license plate read events, license plate hit events, generate a license plate hits report, generate a license plate reads report.
- M. The SDK shall support the following alarm functions: view alarms in real time, acknowledge alarms, change priority, and change recipient.

2.44 FIELD DEVICES

- A. Door Contacts
 - 1. Provide steel door recessed type DPDT door contacts.
 - 2. Provide industrial wide gap surface mount DPDT magnetic contacts equipped with flex stainless steel conduit.

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- B. Request to Exit Devices (Door Release Hardware)
 - 1. Provide Trim plate for all required locations.
 - 2. All electric door locks shall be configured for fail-safe un-delayed free egress operation and fail-secure to prevent unauthorized entry on loss of power.
 - 3. Contractor to set up each control device to allow entry as permitted by the building access system, to prevent unauthorized entry, and to allow free exit from the building without special knowledge or effort.

- C. Magnetic Alarm Contacts
 - 1. Provide on doors, where indicated on construction documents. Contact to signal door status changes to the controller.
 - 2. Contacts shall be single-pole, double throw devices. Provide with 1” gap length on each side of latch.
 - 3. Connect all door contacts to access control input modules.

- D. Visitor Entry Door IP (Video Intercom System)
 - 1. Video intercom basis of design shall be IP based with integration to access control card reader system
 - 2. Provide one entry video intercom door station at the reception. Refer to plans for location.
 - 3. At each station provide RJ-45 10 BASE-T/100 BASE-TX network connection using CAT-5e/6 cable. Provide additional wiring and power connections as needed for relay output and contactor input. Provide each station with 802.3af compliant power-over-ethernet connection for power.
 - a. Master Station: Provide master control duplex handset with IP addressable audio/video and hands-free duplex device with integral 3.5” color video monitor. Each device to have one door release device and size programmable buttons for speed dial.
 - b. Door Station: Flush mount IP audio/visual intercom video duplex device with weather and vandal resistant housing, wide angle camera, speaker, audio device and call button.
 - 4. Door Release Relay Module: Provide door release relay module configured as an interface between the door release mechanism and the control station door release button.

- E. Reception Office Campus Access Door and Gate Release System
 - 1. Provide access door release switch system on designated doors on plans.
 - 2. Provide 4 button door control console at reception desk.
 - a. One button shall release door between main door and vestibule.
 - b. One button shall release door between vestibule and entry door.
 - c. One button shall release door between Entry Gate(s).
 - 3. Vestibule inner door to main hallway shall be commissioned to be locked per owner requirements.
 - 4. Provide UL listed timer module. Provide timer with adjustable timing cycle delay. Timer set at owner preference. Latching timer to start at contact closure from door release console,
 - 5. Provide audio/visual buzzer. Audio/visual output device to be located in corridor near reception. Contact closure to initiate output device.

- F. Door Hardware Power Supplies
 - 1. Contractor to provide all materials, power, cabling, power supplies, and pathways for all access controls equipment and door hardware.
 - 2. Contractor to provide fire alarm and campus emergency lockdown relays for all low voltage door hardware.

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3. Power supplies for door hardware to be supplied from local technology room or enclosure. Refer to plans for location.
4. Multi-door power supplies are recommended but not required. Design shall be by the contractor. Provide all supplies with 25% spare capacity based on manufacturers max operating loads.

2.45 CABLE

- A. All newly installed cabling shall be plenum rated, unless noted otherwise.
- B. Wire gauge shall be furnished per circuit based on cable length and current requirements by manufacturer.
- C. Reader Cables shall be 6-conductor as manufactured.
- D. Electric Strikes and Electric Latch Retraction cables shall be 2-conductor as manufactured.
- E. Splicing is unacceptable.
- F. Refer to division 27 for owner's cabling standards and horizontal pathway requirements.

2.46 SOFTWARE

- A. Provide programming and additional software license. Contractor to program per Owner requirements. System to utilize existing owner-wide server (or equivalent appliance / system) and credential database.
- B. Capabilities to include the following:
 1. Multi-user and multi-tasking, allowing for independent activities to occur at various workstations simultaneously.
 2. Graphical user interface following interface guidelines similar to Microsoft Windows (or equivalent operating system).
 3. Open architecture type system which will allow for importing and exporting data integrated with other systems (i.e. video surveillance, intrusion, etc.)
 4. Password protected login access
 5. Open database connectivity.
- C. Provide latest update and firmware during commissioning of system, prior to substantial completion.

PART 3 - EXECUTION

3.1 SUBMITTAL

- A. Provide shop drawing of room layout with dimensions with:
 1. Equipment: location, workspace clearances, weights,
 2. Grounding: location installation
- A. Provide product data covering all proposed equipment, materials, and products. Data to include

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rating, parameters, warranty, manufactures' guidelines and installation instructions, finish, all other parameter outlined in Part 2-Products including but not limited to.

1. Control panel wiring and interconnection schematics.
2. Complete point to point wiring diagrams.
3. Riser diagrams.
4. Complete floor plan drawings locating all system devices.
5. Factory data sheets on each piece of equipment proposed.
6. Detailed system operational description. Any specification differences and deviations shall be clearly noted and marked.
7. Complete system bill of material.
8. Line by line specification review stating compliance or deviation.

3.2 INSTALLATION

A. General

1. Contractor to install per manufacturer's written instruction and recommendations for the entirety of this section.
2. Schedule, configuration, and implementation of scheduled automatic door lock/unlocking shall be verified with owner.
3. All field device to be mounted installed in accordance with ADA requirements.
4. Provide wiring to the request-to-exit devices located in the electrified door hardware
5. Door contactors shall be recessed in door header. Install all contactors per plans.
6. Contractor shall provide all cabling and accessories required to provide complete access control access control solution and proper integration with building burglar alarm system for door contact shunting.
7. Contractor shall provide all cabling and terminations required to connect to door hardware.

B. Additional Required Equipment

1. Installation of a card reader at each Intrusion Alarm keypad for Building Arming Integration.

C. Field Quality Control

1. Where these specifications require a product or assembly without the use of a brand or trade name, provide a product that meets the requirements of the specifications, as supplied and warranted by the system vendor. If the product or assembly is not available from the system vendor, provide product or assembly as recommended by the system vendor.
2. Periodic observations will be performed during construction to verify compliance with the requirements of the specifications. These services do not relieve the Contractor of responsibility for compliance with the Contract Documents.

D. Administration

1. Refer to section 27 05 53 Identification and Administration

3.3 INSPECTION AND TESTING RESULTS

A. Refer to section 27 17 10 regarding testing process and procedures.

B. During the Project, the Contractor shall maintain an adequate inspection system to ensure that

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the materials supplied, and the work performed, conform to contract requirements.

C. Deployment Services and System Commissioning

1. General Requirements:

a. The contractor shall engage the services of the USP vendor to assist in the management of the deployment of the USP at the end-user site on projects that involve:

- 1) Multiple contractors or subcontractors that will be responsible for deploying the USP at multiple client sites in different geographical regions.
- 2) Complex enterprise installations involving advanced functionality (for example The Remote monitoring feature, failover, plugins) and/or multiple systems (for example access control, video, ALPR) and/or third party integrations.
- 3) Extensive use of customized solutions/plugins developed by the vendor that will be integrated into the USP.

2. The USP vendor services shall include Deployment Management and System Configuration and Commissioning.

D. Deployment Management Service:

1. The Deployment Management service from the vendor shall include a Project Manager acting as the single point of contact for all communications between the contractor and the vendor organization and who will be responsible for:

2. Conducting a Risk Assessment of the impact of potential risk factors on the operation of the vendor's USP.
3. Providing a project plan for the deployment of the vendor's USP.
4. Managing the development and deployment of the custom solution components that will be integrated into the vendor's USP (if applicable).
5. Providing a scope of work detailing the services to be provided by the vendor to assist in the deployment of the vendor's USP.
6. Coordinating and scheduling the vendor field services with the contractor to assist with the deployment of the vendor's USP.
7. Providing regular project status updates to the contractor regarding the development of custom solutions (if applicable) and the deployment of the vendor's USP.
8. The UMS should support integration with an intrusion detection system to allow access control events to function as alarm triggers. These events should be reviewed by human monitoring agents before emergency scenarios are triggered.

E. Solution Architect Service:

1. The Solution Architect service from the vendor shall include a Solutions Architect Engineer acting as a single technical point of contact throughout the deployment of the USP, and who will be responsible for:
2. Assisting the contractor/subcontractor with the design and architecture of the vendor's USP.
3. Conducting technical consultation activities that may include fit/gap analysis, system design reviews, device compatibility assessments, functional and technical design reviews, as well as performance reviews of the vendor's USP.
4. Conducting a system assessment and ensuring best practices of the vendor's USP are followed.
5. Providing upgrade and migration strategy for the vendor's USP where applicable.
6. Providing documentation regarding the system architecture, system design, hardware specifications and compatibility requirements, camera bandwidth calculations, and best practices as they relate to the vendor's USP.

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- F. System Configuration and Commissioning Service:
 - 1. The System Configuration and Commissioning service from the vendor shall include a Field Engineer who will be responsible for:
 - a. Assisting the contractor's or subcontractor's onsite/remote technicians with the configuration and commissioning of the vendor's USP at the client site.
 - b. Conducting a test of the USP following the deployment of the system using real-world operator scenarios to ensure optimal system performance.
 - c. Providing the contractor with a Service Report detailing the tasks completed during the deployment of the USP at the client site, as well as any recommendations for improving the performance of the USP that must be implemented by the contractor.
 - d. Providing a knowledge transfer of the vendor's USP to the contractor following the deployment of the USP at the client site.
- G. Final test report shall be submitted and acknowledged by the Owner prior to substantial completion.

3.4 SYSTEM TRAINING

- A. Provide all O and M manuals hardcopy and digital copy. Digital to copy to be transmitted via and external hard drive.
- B. Provide The contractor shall engage the services of the USP vendor to assist in the end user training of the USP at the end-user site.
- C. Instruction shall include the following:
 - 1. As-built documentation.
 - 2. Provide walking tour of system, with description of various component and their associated purpose or function and cabling routing.
 - 3. Details description and demonstration of system and various components functionality, and performance expectations.
 - 4. Set up and demonstration of software with end-user.
 - 5. Set up and creation of basic configurations with end-user.
 - 6. Provide and plan for (3) separate 8-hour training sessions that can be broken up and scheduled by the Owner as they would like between substantial completion and 90 days thereafter.

3.5 LETTER OF CONFORMANCE

- A. Letter of Conformance: Stating system were installed in accordance with NFPA and manufacturer's recommendation.

3.6 SYSTEM DOCUMENTATION

- A. Complete documentation shall be provided for the system. The documentation shall describe:
 - 1. All operational parameters of the system.
 - 2. Complete documentation of programming and features.
 - 3. Complete operating instructions for all hardware and software.
- B. The following sections shall be provided in the system documentation:

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1. Maintenance Manual: A comprehensive document on all aspects of physical maintenance of the systems, including cleaning of the displays, filter cleaning, filter changing.
2. Technical Manual: A comprehensive document providing all system operations, troubleshooting flowcharts, functional system layout, wiring diagrams, block diagrams and schematic diagrams.
3. User Manual: A step-by-step guide and instructions detailing all system user functions.
4. Two electronic copies of the final programming and program software to the Owner's Security Supervisor after final approval.

END OF SECTION 281300

SECTION 282300 - VIDEO SURVEILLANCE SYSTEM (PERFOMANCE SPEC)

PART 1 - GENERAL

1.1 PERFOMANCE STATEMENT

- A. This specification section and the accompanying video intercom system-specific Contract Documents are performance based, describing the minimum material quality, required features, and operational requirements of the system. These documents do not convey every wire that must be installed and every equipment connection that must be made. Based on the equipment constraints described and the performance required of the system, as presented in these documents, the vendor and the Contractor are solely responsible for determining all wiring, programming and miscellaneous equipment required for a complete and operational system.

1.2 SECTION TOPICS INCLUDE

- A. Cameras, Associated Hardware/Software Components, User Interface Programming, and Third-Party Integration (optional and not mandatory).

1.3 RELATED DIVISIONS

1. Division 27 – Refer to division for additional details.
2. Division 28 – Refer to division for additional details.

1.4 REFERENCES

- A. NFPA 70 – National Electrical Code
- B. Electronic Industries Association (EIA) Video Surveillance Equipment Standards
- C. UL 2044 - Standard for Commercial Closed Circuit Television Equipment
- D. UL 3044 - Standard for Safety for Surveillance Closed Circuit Television Equipment

1.5 SYSTEM DESCRIPTION & SCOPE OF WORK

- A. **The basis of design shall be Verkada or an authorized equivalent. Each proposal from alternate manufacturers will be subject to individual evaluation by both the owner and the owner's representative as part of the contract's requirements.**
- B. This specification section describes the furnishing, installation of rough-in and cabling for an IP based video surveillance system. The project scope includes the contractor installing a turnkey video surveillance system with integration to a unified user platform. The unified user platform must be able to monitor, adjust, and initiate video surveillance, access control, and other IP based systems.
- C. For sites with existing video surveillance systems (as noted on drawings), contractor shall remove all associated video surveillance equipment, components, servers, cameras / mounting kits, power supplies, software and replace with new video surveillance system. Contractor shall return ALL demolished video surveillance system equipment and provide a written transmittal of completion to owner & owner's representative.

1.6 QUALITY ASSURANCE

- A. Manufacturer: The camera system shall be a single-source manufacturer such that the single manufacturer distributes, supports, warranties and services the main components.
- B. Installer: The installing dealer must be a factory-authorized service and support company

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specializing in the selected manufacturer's product, with demonstrated prior experience with the selected manufacturer's system installation and programming.

1.7 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 28 05 00.

1.8 PROJECT RECORD DOCUMENTS

- A. Submit documents under the provisions of Section 28 05 00.
- B. Provide final system block diagram showing any deviations from shop drawing submittal.
- C. Provide statement that system checkout test, as outlined in shop drawing submittal, is complete and satisfactory.
- D. Warranty: Submit written warranty and complete all Owner registration forms.
- E. Complete all operation and maintenance manuals as described below.

1.9 OPERATION AND MAINTENANCE DATA

- A. Submit documents under the provisions of Section 28 05 00.
- B. Manuals: Final copies of the manuals shall be delivered within 30 days after completing the installation test. Each manual's contents shall be identified on the cover. The manual shall include names, addresses, and telephone numbers of the responsible for the installation and maintenance of the system and the factory representatives for each item of equipment for each system. The manuals shall have a table of contents and labeled sections. The final copies delivered after completion of the installation test shall include all modifications made during installation, checkout, and acceptance testing. The manuals shall consist of the following:
 - 1. Functional Design Manual: The functional design manual shall identify the operational requirements for the system and explain the theory of operation, design philosophy, and specific functions. A description of hardware and software functions, interfaces, and requirements shall be included.
 - 2. Maintenance Manual: The maintenance manual shall include descriptions of maintenance for all equipment including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.

1.10 WARRANTY

- A. Unless otherwise noted, provide warranty in (5) year increments after Date of Substantial Completion for all materials and labor.
- B. Work Requests: The Contractor shall separately record each service call request on a service request form. The form shall include the model and serial number identifying the component involved, its location, date and time the call was received, specific nature of trouble, names of service personnel assigned to the task, instructions describing what has to be done, the amount and nature of the materials used, the time and date work started, and the time and date of

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completion. The Contractor shall deliver a record of the work performed within five (5) days after work is accomplished.

- C. System Modifications: The Contractor shall make any recommendations for system modification in writing to the Owner. No system modifications shall be made without prior approval of the Owner. Any modifications made to the system shall be incorporated into the operations and maintenance manuals, and other documentation affected. To the fullest extent possible, the Owner shall be provided with electronic restorable versions of all configurations prior to the modifications being made.
- D. Software: The Contractor shall provide all software updates during the period of the warranty and verify operation in the system. These updates shall be accomplished in a timely manner, fully coordinated with camera surveillance system operators, shall include training for the new changes/features enabled, and shall be incorporated into the operations and maintenance manuals, and software documentation.
- E. Refer to the individual product sections for further warranty requirements of individual system components.
- F. Provide complete terms and conditions of warranty and service, including SMA agreements must be turned over to owner in binder format and digital format.

PART 2 - PRODUCTS

2.1 VIDEO SURVEILLANCE SYSTEM AND SERVER (OR EQUIVALENT APPLIANCE)

- A. The Video Management System shall support both centralized and decentralized configurations as well as hybrid options for architecture. Centralized management shall be available no matter the surveillance architecture. The system shall allow for integration with other security devices and products and be designed to allow for leveraging of those products to improve the user experience of the VMS.
- B. Contractor shall provide and install all server (or equivalent appliance)s/hardware and licensing to ensure a fully functional camera surveillance system that shall integrate to a unified user software platform. Contractor shall accommodate alternates and scalability of devices and components when configuring server (or equivalent appliance) storage, licensing, and SMA items.
- C. For all contract sites receiving video surveillance products and services, contractor shall ensure site(s) has Enterprise level products, services, and warranties.
- D. All programming, licensing, hardware, installation, etc., of the server (or equivalent appliance) and its software shall be provided and completed by Contractor.
- E. Camera retention shall be a minimum of 30 days at a minimum of 24 FPS. For each campus/site, contractor shall coordinate with manufacturer's VMS engineers to properly size the on-premise (or cloud-based) video storage server (or equivalent appliance) according to drawing & specification device quantities plus room for scalability (~20% additional storage capacity).
- F. Contractor shall coordinate with manufacturer's video surveillance engineers and owner to

SECTION 282300 - VIDEO SURVEILLANCE SYSTEM (PERFOMANCE SPEC)

configure video storage backups via cloud management, including automated back-up frequencies, video deletion parameters / duration, timestamp features, compatibility and functionality across other systems including: access control, intrusion detection, video intercom, environmental sensor systems, etc.

2.2 IP BASED NETWORK CAMERAS

- A. Note: Contractor shall ensure cameras or related equipment used on project, shall not exceed a 30day lead time. All camera or related equipment alternatives must have documented approval by owner and technology consultant prior to installation.
- B. Approved camera parameters:
 - 1. Cameras must be IP-based and ONVIF, RTSP, HTTP, or equivalent compliant protocols.
 - 2. IR sensors must be included on all camera types.
 - 3. Cameras with fixed or varifocal options.
 - 4. Camera resolution must be 2MP – 5MP(per lens / sensor).
 - 5. IP Server (or equivalent appliance) shall support motion detection at the camera and at the software levels.
 - 6. Camera mounting kit shall be rated for its environment.
 - 7. PoE capabilities.
 - 8. Minimum video compression protocols: H.265, H.264, and MJPEG.
 - 9. Compatible with AI software analytics.
- C. Approved PoE surge protection (for exterior cameras):
 - 1. Ditek, model DTK-MRJPOES.
 - a. All cameras and mounting hardware are to be furnished and installed by Contractor. All cameras shall be mounted utilizing the preferred means and methods as outlined by manufacturer. All exterior cameras and mounting hardware must have an approved IP66 or better NEMA rating.
 - b. For all cameras mounted on the exterior, contractor shall provide and install proper grounding solutions.
 - c. For any new cameras or related equipment being installed, contractor shall provide and install rough-in and new category cabling matching the owner’s cabling standards – including cable color scheme and labeling. Contractor shall provide and install a minimum of CAT6 plenum cable for new camera installs. Contractor shall refer to the division 27 Structured Cabling Systems for additional details.
 - d. Owner shall furnish all PoE network switches for newly installed cameras. Contractor shall coordinate with owner’s I.T. dept during camera implementation phase.
 - e. Contractor shall obtain written consent from owner if implementing equivalent camera manufacturer.
 - f. Locate all Cameras on a Drawing as programmed for location and number by Owner.
 - g. Locate no Camera higher than 14’ A.F.F. – unless noted otherwise.
 - h. Locate exterior Cameras so as not to be blocked by canopys, overhangs, trees, poles, or any physical obstructions compromising camera field of views. Contractor shall coordinate with owner for final field of views within manufacturer’s unified user platform.
 - i. Refer to contract documents for camera manufacturer details.

2.3 VIDEO MANAGEMENT SYSTEM (VMS) GENERAL REQUIREMENTS

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- A. The VMS shall support updating its camera drivers independent of the VMS installation. New drivers shall be released multiple times a year to extend support for new devices and features. The VMS must be capable of firmware updates to all cameras and related VMS hardware via the network. Warranty must include 5 years minimum with recommended 10 years across all video surveillance hardware / software components.
- B. The VMS shall be based on a true open architecture that shall allow the use of non-proprietary workstation and server (or equivalent appliance) hardware, non-proprietary network infrastructure, and non-proprietary storage.
- C. The VMS shall offer a complete and scalable video surveillance solution that shall allow cameras to be added on a unit-by-unit basis.
- D. The VMS shall integrate DVS using the DVS native SDK or using the following industry standards to interface to the DVS:
 - 1. ONVIF, RTSP, HTTP, Rest APIs, or equivalent.
- E. All video streams supplied from analog cameras or IP cameras shall be digitally encoded in 265, H.264, MPEG-4, MPEG-2, MJPEG, MxPEG, Wavelet, or JPEG2000 compression formats and recorded simultaneously in real time.
- F. All audio streams supplied from IP video server (or equivalent appliance)s shall be digitally encoded in g711 (u-law), g721, g723, or AAC compression formats and recorded simultaneously in real time.
- G. Each camera's bit rate, frame rate, and resolution shall be set independently from other cameras in the system and altering these settings shall not affect the recording and display settings of other cameras.
- H. The VMS shall be able to use multiple CCTV keyboards to operate the entire set of cameras throughout the system, including brands of cameras from various manufacturers and including their PTZ functionalities
- I. The VMS shall be able to retrieve and set the current position of PTZ cameras (if applicable to project) using XYZ coordinates.
- J. The VMS shall support PTZ camera protocols (if applicable to project) from multiple manufacturers, including analog and IP protocols.
- K. The VMS shall arbitrate the user conflict on PTZ usage based on user levels per camera.
- L. The VMS shall support changing passwords of video units:
 - 1. The VMS shall show the strength of the current unit password.
 - 2. The VMS shall have the ability to change the password manually or using a string password generator for single or multiple units.
 - 3. The VMS shall have the ability to automatically update passwords on schedule.
 - 4. The VMS shall keep the history for passwords and the ability to retrieve them.
 - 5. The VMS shall have the ability to export passwords of units for safekeeping.
- M. The VMS shall support managing certificates of video units used for secure command and control:
 - 1. Push Initial Certificate
 - 2. Automatically switch from HTTP and RTSP to HTTPS, REST APIs or equivalent.
 - 3. Allow certificate renewal
 - 4. Manage certificates manually for a single device or a batch of devices
 - 5. Automatically update upon configured schedule for single device or batch of devices
- N. The VMS shall allow for the configuration of a time zone for each camera connected to a DVS. For playback review, users shall have the ability to search for video based on the following options:
 - 1. Local time of the camera
 - 2. Local time of the SSM
 - 3. Local time of user's workstation
 - 4. GMT Time
 - 5. Other time zone
- O. Audio and Video storage configuration for the SSM shall either be:
 - 1. Internal or external IDE/SATA/SAS organized or not in a RAID configuration.
 - 2. Internal or external SCSI/iSCSI/Fiber Channel organized or not in a RAID configuration.

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3. Within the overall storage system, it shall be possible to include disks located on:
 - a. External PCs on a LAN or WAN
 - b. Network Attached Server (or equivalent appliance)s (NAS) on a LAN or WAN
 - c. Storage Area Networks (SAN)
- P. The SSM shall not limit the actual storage capacity configured per server (or equivalent appliance).
- Q. Cyber Security Requirements
 1. The USP shall be an IP enabled solution. All communication between the SSM and CSA shall be based on standard TCP/IP protocol and shall use TLS encryption with digital certificates to secure the communication channel. The USP shall support user authentication with claims-based authentication using external providers. External providers shall include:
 2. ADFS (Active Directory Federation Services)
 3. Azure Active Directory (through OpenID Connect)
 4. Ping Identity (through OpenID Connect)
 5. KeyCloak (through OpenID Connect)
 6. Other Open ID Connect / SAML2 authentication agents
 7. The USP shall limit the IP ports in use and shall provide the Administrator with the ability to configure these ports.
 8. The VMS shall support only secured media stream requests, unless explicitly configured otherwise. Secured media stream requests shall be secured with strong certificate-based authentication leveraging RTSPS (RTSP over TLS). Client authentication for media stream requests is claims-based and may use a limited lifetime security token.
 9. The VMS shall offer the ability to encrypt the media stream, including video, audio, and metadata with authenticated encryption. Media stream encryption shall be done at rest and in transit and be a certificate-based AES 128-bits encryption. The VMS shall:
 - a. Allow encryption to be set on a per camera basis for all or some of the cameras.
 - b. Provide up to 20 different certificates for different groups of CSA or users who have been granted access to decrypted streams.
 - c. Not decrease the recording performance by more than 50% when encryption is enabled.
 - d. Use Secure RTP (SRTP) to encrypt the payload of a media stream in transit and allow multicast and unicast of the encrypted stream.
 - e. Use a random encryption key and change periodically.
 - f. Allow encrypted streams to be exported.
 10. The VMS shall support end to end encrypted streams with cameras supporting Secure RTP (SRTP) both in unicast and multicast from the camera.
 11. The USP shall support encryptions for all communications with its databases.
 12. The USP shall provide in its main user interface a visual list showing the state of all configuration items relating to the cyber security hardening of the features of the system.
 13. The USP shall provide recommendations relating to the passwords used to access the hardware units in the system. The recommendation should display if the passwords used on the units are weak, average, strong, or very strong.
 14. The USP shall provide the ability to manually or automatically change the video unit passwords with manufacturer's native API, standard manufacturer Protocol or ONVIF, RTSP, HTTP, REST APIs, or equivalent. The VMS shall support password change for video units as follows:
 - a. In batch or per unit
 - b. On schedule
 - c. From an event
 - d. Based on manufacturer's policies
 - e. The USP shall allow backup of last 5 passwords.
 - f. The USP shall allow copying password to clipboard to be used in the device webpage if the user has the appropriate privileges.

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- g. The USP shall provide the ability to export the video unit passwords if the user has the appropriate privileges.
- 15. The USP shall provide recommendations relating to the firmware of the hardware units enrolled in the system. Recommendations should display if the firmware is up to date, out of date, or if it has known security vulnerabilities.

2.4 FAILOVER AND STANDBY REQUIREMENTS

2.5 ARCHIVING

- A. The VMS system shall be capable of achieving at programmable intervals with a minimum of 30-day storage retention period. Contractor to coordinate storage retention with owner.

2.6 CLOUD ARCHIVING

- A. The VMS shall support the automatic transfer of video recorded to the cloud or on-prem equipment, based on the age of the video.

2.7 VMS MEDIA STREAMING

- A. The VMS shall be capable of media streaming via LAN, network, or equivalent methods while maintaining security protocols.

2.8 VMS VIDEO ARCHIVES TRANSFER CAPABILITIES

- A. Archive transfer shall provide the ability to:
 - 1. Transfer video from a server (or equivalent appliance) to another server (or equivalent appliance) in the same system.
 - 2. Transfer video from a federated server (or equivalent appliance) to another server (or equivalent appliance).
 - 3. Transfer video from camera storage to a server (or equivalent appliance).
 - 4. Transferable media may also include hybrid-cloud solutions.
- B. It shall be possible to program video transfers either on a recurrent schedule, or to trigger them manually or upon connection.
- C. It shall be possible to filter the video of interest for a transfer. The video of interest shall be defined with the following filters:
 - 1. All archives when the camera was offline.
 - 2. Alarms.
 - 3. Playback request from the edge.
 - 4. Video analytics events.
 - 5. Motion events.
 - 6. Bookmarks.
 - 7. Input triggers.
 - 8. Time range.
- D. It shall be possible to define the length of video before and after the event used as a filter to determine the video of interest.
- E. The USP shall offer an interface for displaying all video archive transfer requests. This interface shall display all the current, requested and scheduled video transfer requests. It shall be possible to edit, trigger, and cancel video archive transfers from this interface.
- F. The USP shall offer an interface for querying past video transfers and their outcome.

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2.9 SECURITY VIDEO ANALYTICAL & AI FUNCTIONALITY

- A. The VMS shall utilize a floor plan layout which can be used for tracking, monitoring, analytics, emergency sequence of operations, and share video footage in multiple file formats.
- B. The analytics shall be completely unified with the Video Management System.
- C. Configuration shall natively be performed in the configuration interface of the Video Management System.
- D. The analytics shall feature dedicated configuration possibilities for the following scenarios:
 - 1. Perimeter protection
 - 2. Positional tracking
 - 3. Area protection
 - 4. Direction control
 - 5. Object detection
 - 6. Stopped vehicle detection
 - 7. Tailgating Detection
- E. Each of the scenarios shall trigger events in the Video Management System, which correspond to their functionality.
- F. Additional to these scenarios, the analytics shall allow to configure custom intrusion detection and object detection scenarios as well as allow to import settings to allow maximum flexibility.
- G. The analytics license shall allow to configure any one of these scenarios per camera.
- H. The analytics shall allow at least two different detection variants:
 - 1. Trigger an alarm if a motion pattern moves from zone A (source) through zone B into zone C (sink).
 - 2. Trigger an alarm if a motion pattern moves anywhere inside a specified zone.
- I. The analytics shall support an unlimited number of detection areas.
- J. The analytics feature rain-filters to filter out disturbances.
- K. The analytics shall feature live configuration to immediately see the effects of parameter changes in the configuration interface without prior saving new configurations.
- L. The configuration of the analytics shall be possible on recorded video streams.
- M. The analytics shall offer the possibility to configure object movement paths.
- N. The analytics shall not employ tripwires or crosslines.
- O. Areas and the scenes perspective (near & far object size) shall be configured on-screen using a point-and-click interface.
- P. The analytics shall feature filters for movement speed, distance, and direction to detect events.
- Q. The analytics shall feature options to separately show or hide areas, area names, and detection overlays.
- R. The analytics shall be fully server (or equivalent appliance)-based, with no calculation on cameras necessary.
- S. The analytics shall operate with color, thermal, and infrared cameras.
- T. The accuracy of the analytics shall be evaluated and approved by the CPNI Video Analytics Assessment Programme and shall be listed in the CPNI Catalogue of Security Equipment (CSE).

2.10 CAMERA INTEGRITY MONITOR

- A. Description:
 - 1. Automatically checks camera feeds to detect if cameras have been tampered with.
 - 2. Can be used for near-real-time alerting of tampering events or as a maintenance tool.

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3. Reports can be run on detected tampering events.
- B. Details:
 1. It shall be completely unified with the Video Management System.
 2. It shall be possible to set the detection sensitivity per camera stream between low, medium, and high.
 3. It shall be possible to choose on which server (or equivalent appliance)s the analytics shall run.
 4. The camera stream used for analytics shall be configurable.
 5. It shall be possible to define how many cameras are being analyzed at the same time.
 6. To utilize minimum hardware resources, it shall be definable how often camera streams are analyzed.
 7. There shall be an overview over which cameras are configured to be analyzed.

2.11 GENERAL CLIENT SOFTWARE REQUIREMENTS

- A. The Client Software Applications (CSA) shall provide the user interface for USP configuration and monitoring over any network and be accessible locally or from a remote connection.
- B. The CSA shall consist of the Configuration UI for system configuration and the User interface for monitoring. The CSA shall be Windows-based and provide an easy-to-use graphical user interface (UI).
- C. The CSA for monitoring shall support running in 64-bit mode.
- D. The Server (or equivalent appliance) Administrator shall be used to configure the server (or equivalent appliance) database(s). It shall be web-based and accessible locally on the SSM or across the network.
- E. The CSA shall seamlessly merge access control, license plate recognition (ALPR), and video functionalities within the same user application.
- F. The USP shall use the latest user interface (UI) development and programming technologies & software.
- G. All applications shall provide an authentication mechanism, which verifies the validity of the user. As such, the administrator (who has all rights and privileges) can define specific access rights and privileges for each user in the system.
- H. Logging on to a CSA shall be done either through locally stored USP user accounts and passwords or using the operator's Windows credentials when Active Directory integration is enabled.
- I. When integrated with an Active Directory, the VMS shall authenticate users using their assigned credentials. As a result, the USP / VMS will benefit from password authentication and strong security features.
- J. When integrated with an external identity provider such as Windows Active Directory, ADFS (Active Directory Federation Services) or an Open ID Connect/SAML2 identity provider (ex.: Azure AD), the CSA and USP shall authenticate using a Single-Sign On experience to the users. As a result, the USP will benefit from reusing the same credential throughout enterprise applications.
- K. The CSA shall support multiple languages, including but not limited to the following: English, French, Arabic, Czech, Dutch, German, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Persian (Farsi), Polish, Portuguese (Brazilian), Simplified and Traditional Chinese, Russian, Spanish, Swedish, Thai, Turkish, and Vietnamese.
- L. To enhance usability and operator efficiency, the Configuration UI and User interface shall support many of the latest UI such as:
 1. A customizable Home Page that includes favorite and recently used tasks.
 2. Task-oriented approach for administrator/operator activities where each type of activity
 3. (surveillance, visitor management, individual reports, and more) is an operator task.
 4. Consolidated and consistent workflows for video, ALPR, and access control.
 5. Single click functionality for reporting and tracking. The User interface shall support both

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single-click reporting for access control, ALPR, and video, as well as single-click tracking of areas, cameras, doors, zones, cardholders, elevators, ALPR entities, and more. Single-click reporting or tracking shall create a new task with the selected entities to report on or track.

- M. Configuration UI and User interface Home Page and Tasks
 - 1. The Configuration UI and User interface shall be task oriented.
 - 2. A task shall be user interface design patterns whose goal is to simplify the user interface by grouping related features from different systems, such as video and access, in the same display window. Features shall be grouped together in a task based on their shared ability to help the user perform a specific task.
 - 3. Tasks shall be accessible via the Home Page of either the Configuration or the Surveillance CSA.
 - 4. Newly created tasks shall be accessible via the Configuration UI or the User interface taskbar.
 - 5. Similar tasks shall be grouped into the following categories:
 - a. Operation: Access control management, LRP management, and more.
 - b. Investigation: Video bookmark/motion/archive reports, access control activity reports, visitor activity reports, alarm reports, ALPR activity reports, and more.
 - c. Maintenance: Access control and video configuration reports, troubleshooters, audit trails, health-related reports, and more.
 - 6. An operator shall be able to launch a specific task only if they have the appropriate privileges.
 - 7. The Home Page content shall be customizable through the use of privileges to hide tasks that an operator should not have access to and through a list of favorite and recently used tasks. In addition, editing a USP XML file to add new tasks on the fly shall also be possible.
- N. The Contractor shall provide up to 10 number of simultaneous Clients.

2.12 CONFIGURATION USER INTERFACE (UI)

- A. General:
 - 1. The Configuration UI application shall allow the administrator or users with appropriate privileges to change the system configuration. The Configuration UI shall provide decentralized configuration and administration of the USP system from anywhere on the IP network.
 - 2. The configuration of all embedded ACS, VMS, and ALPR systems shall be accessible via the Configuration UI.
 - 3. The Configuration UI shall have a home page with single-click access to various tasks.
 - 4. The Configuration UI shall include a variety of tools such as troubleshooting utilities, import tools, and a unit discover tool, amongst many more.
 - 5. The Configuration UI shall include a static reporting interface to:
 - a. View historical events based on entity activity. The user shall be able to perform such actions as printing a report and troubleshooting a specific access event from the reporting view.
 - b. View audit trails that show a history of user/administrator changes to an entity.
 - 6. Common entities such as users, schedules, alarms and many more, can be reused by all embedded systems (ACS, VMS, and ALPR).
- B. Video management system:
 - 1. The Configuration UI shall allow the administrator or users with appropriate privileges to change video configuration.
 - 2. The Configuration UI shall provide the ability to change video quality, bandwidth, and frame rate parameters on a per camera (stream) basis for both live and recorded video.

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3. The Configuration UI shall provide the ability to change video quality by a selection of predefined video quality template.
4. The Configuration UI shall provide the ability to configure brightness, contrast, and hue settings for each camera on the same DVS.
5. The Configuration UI shall provide the capability to enable audio recording on DVS units that support audio.
6. The Configuration UI shall provide the ability to change the audio parameters, serial port and I/O configuration of individual DVS units.
7. The Configuration UI shall provide the capability to rename all DVS units based on system topology and to add descriptive information to each DVS.
8. The Configuration UI shall provide the ability to set recording schedules and modes for each individual camera. The recording mode can be:
 - a. Continuous
 - b. On motion and Manual
 - c. Manual only
 - d. Disabled
9. The Configuration UI shall support the creation of schedules to which any of the following functional aspects can be attached:
 - a. Video quality (for each video stream per camera)
 - b. recording (for each camera)
 - c. Motion detection (for each detection zone per camera)
 - d. Brightness, Contrast, and Hue (for each camera)
 - e. Camera sequence execution
10. The Configuration UI shall support the creation of unlimited recording schedules and the assigning of any camera to any schedule.
11. The Configuration UI shall detect and warn user of any conflict within assigned schedules.
12. The Configuration UI shall provide the capability to set a PTZ protocol to a specific DVS serial port and shall allow mixing domes of various manufacturers within a system.
13. User shall have the ability to configure a return to home function after a predefined time of inactivity for PTZ cameras. This period of inactivity time shall be configurable from 1 to 7200 seconds.

2.13 VMS CLEINT USER INTERFACE (UI)

- A. The User interface shall fulfill the role of a Unified User Interface Platform that is able to monitor video, ALPR, and access control events and alarms, as well as view live and recorded video.
- B. The User interface shall provide a graphical user interface to control and monitor the USP over any IP network. It shall allow administrators and operators with appropriate privileges to monitor their unified security platform, run reports, and manage alarms.
- C. To enhance usability and operator efficiency, the User interface shall support the following UI concepts:
 1. Dynamically adaptive interface that adjusts in real-time to what the operator is doing.
 2. A dynamic controls section loaded with entity-specific widgets (e.g., door and camera widgets).
 3. Use of transparent overlays that can display multiple types of data in a seamless fashion.
 4. Display tile menus and quick commands.
 5. Consolidated and consistent workflows.
 6. Tile menus and quick commands easily accessible within every display tile of the user

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- workspace.
 - 7. Single click functionality for reporting and tracking. The User interface shall support both single-click reporting for access control, ALPR, and video, as well as single-click tracking of areas, cameras, doors, zones, cardholders, elevators, ALPR entities, and more. Single-click reporting or tracking shall create a new task with the selected entities to report on or to track.
- D. User interface Home Page and Tasks:
- 1. Similar tasks shall be grouped into the following categories:
 - a. Operation: Access control/LRP/video surveillance, visitor management, mustering, access control and video alarm monitoring, and more.
 - b. Investigation: Video bookmark/motion/archive reports, access control activity reports, visitor activity reports, alarm reports, ALPR activity reports, and more.
 - c. Maintenance: Access control and video configuration reports, troubleshooters, audit trails, and more.
- E. Dynamically Adaptive UI, Controls section, and Widgets:
- 1. The User interface shall dynamically adapt to what the operator is doing. This shall be accomplished through the concept of widgets that are grouped in the User interface Controls section.
 - 2. Widgets shall be mini-applications or mini-groupings in the User interface Controls section that let the operator perform common tasks and provide them with fast access to information and actions.
 - 3. With a single click on an entity (for example door or camera) the specific widgets associated to that entity appear and other non-relevant widgets disappear dynamically (instantly). Widgets shall bring the operator information such as door status and camera stream information, as well as user actions, such as door unlock, PTZ controls, and more.
 - 4. Specific widgets include those for a door, camera, alarm, zone, display tile, video stream (statistics), PTZ camera, and more.
- F. The User interface shall be able to monitor the activity of the following entities in real-time: areas, ALPR entities, doors, elevators, cameras, cardholders, cardholder groups, zones (input points), and more.
- G. The User interface shall include advanced video capabilities, including:
- 1. Advanced live video viewing functionality.
 - 2. Advanced archive playing and video playback functionality.
 - 3. Monitoring and management of video system events and alarms.
 - 4. Intercom or duplex audio.
 - 5. Generation of video reports.
 - 6. Control of PTZ cameras.
 - 7. Creating and monitoring archive transfer requests.
 - 8. Display metadata overlaid on live or playback video.
- H. The User interface shall leverage the Graphical Processing Unit (GPU) for video decoding (if applicable, not necessary).
- I. The User interface shall have the ability to decode video (if applicable).
- 1. The live video viewing capabilities of the User interface shall include:
 - a. The ability to display all cameras attached to the USP and all cameras attached to federated systems.
 - b. Support for live video monitoring on each and every display tile within a task in the user's workspace.
 - c. The USP shall support uninterrupted video streaming. The CSA shall keep existing video connections active in the event that an SSM (except Archiver) becomes

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- unavailable.
 - d. The ability to drag and drop a camera into a display tile for live viewing.
 - e. The ability to drag and drop a camera into a display tile for live viewing on an analog monitor connected to an IP hardware decoder (converting an IP encoded stream into an analog video signal).
 - f. The ability to drag and drop a camera from a map into a display tile for live viewing.
 - g. Support for digital zoom on live camera video streams.
 - h. The ability for audio communication with video units with audio input and output.
 - i. The ability to control pan-tilt-zoom, iris, focus, and presets.
 - j. The ability to bookmark important events for later retrieval on any archiving camera and to uniquely name each bookmark in order to facilitate future searches.
 - k. The ability to start/stop recording on any camera in the system that is configured to allow manual recording by clicking on a single button.
 - l. The ability to activate or de-activate viewing of all system events as they occur.
 - m. The ability to switch to instant replay of the video for any archiving camera with the simple click of button.
 - n. The ability to take snapshots of live video and be able to save or print the snapshots.
 - o. The ability to view the same camera multiple times in different tiles.
2. The video playback (archive playing) capabilities of the User interface shall include:
- a. Support for audio and video playback for any time span.
 - b. Support for video playback on each and every display tile.
 - c. The ability to instantly replay the video for any archiving camera with the simple click of a button.
 - d. The ability to select between instant synch of all video streams in playback mode, allowing operators to view events from multiple angles or across several camera fields, or non-synchronous playback.
 - e. The ability to simultaneously view the same camera in multiple tiles at different time intervals.
 - f. The ability to control playback with:
 - 1) Pause
 - 2) Lock Speed
 - 3) Forward and Reverse Playback at: 1x, 2x, 4x, 6x, 8x, 10x, 20x, 40x, 100x
 - 4) Forward and Reverse Playback frame by frame
 - 5) Slow Forward and Reverse Playback at: 1/8x, 1/4x, 1/3x, 1/2x
 - 6) Loop playback between two time markers
 - g. The ability to display a single timeline or one timeline for each selected video stream, which would allow the operator to navigate through the video sequence by simply clicking on any point in the timeline.
 - h. The ability to display the level of motion at any point on a timeline.
 - i. The ability to clearly display bookmarked events on the timeline(s).
 - j. The ability to query archived video using various search criteria, including, but not limited to, time, date, camera, and area.
 - k. The tool necessary for searching video and associated audio based on user-defined events or motion parameters.
 - l. The ability to define an area of the video field in which to search for motion as well as define the amount of motion that will trigger search results. The User interface shall then retrieve all archived video streams that contain motion that meets the search parameters. There shall be a graphical timeline on which the time of each search hit shall be indicated.

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- m. The ability to browse through a list of all bookmarks created on the system and select any bookmarked event for viewing.
 - n. The ability to add bookmarks to previously archived video for easier searching and retrieval.
 - o. Support for digital zoom on playback video streams.
 - p. Still image export to PNG, JPEG, GIF, and BMP format with Date and Time stamp, and Camera Name on the image (snapshot).
 - q. Tools for exporting video and a self-contained video player on various media such as USB keys or CD/DVD-ROM. This video player shall be easy to use without training and shall still support reviewing video metadata, such as bookmark, or navigating the video with functions like panoramic camera view dewarping.
 - r. Tools for exporting video sequences in standard video formats, such as ASF or MP4.
 - s. The ability to encrypt exported video files.
 - t. The ability for an operator to load previously exported video files from their computer or network.
 - u. The ability for queries to be saved upon closing the CSA and reappear when the application is reopened.
 - v. The ability to dynamically block, on demand, video stream dynamically to lower-level users to prevent access, for a specific time, to live and recorded video.
 - w. A tool building and exporting a set of videos into a single container. This tool shall allow the operator to build sequences of video to create a storyboard and allow the export of synchronous cameras.
 - x. The ability to store the video export and still image export at a pre-defined storage location.
 - y. An interface with the ability to list, search, and manipulate previously generated video exports.
 - z. The ability to export sequences of video in open standards including ASF and MP4.
- J. The User interface shall provide an interface to support the following ALPR tasks and capabilities:
- 1. Monitoring and management of ALPR events and alarms.
 - 2. Viewing of license plate picture(s) and context images.
 - 3. Viewing of license plate data (e.g., license plate reads)
 - 4. Verification of ALPR data against live and recorded video.
- K. Entity Monitoring:
- 1. The USP shall permit the user to select multiple entities to monitor from the User interface by adding the entities one by one to the tracking list.
 - 2. The User interface shall provide the option to filter which events shall be displayed in the display tile layout and/or event list layout.
 - 3. It shall be possible to lock a User interface display tile so that it only tracks the activity of a specific entity (e.g., specific door or camera).
 - 4. The user shall be able to drag and drop an event from an event list (or an alarm from an alarm list) onto a display tile to view a license plate read, cardholder picture ID, badge ID, or live/archived video, among other options.
 - 5. Event, alarm, monitoring/tracking, and report lists shall contain cardholder pictures where applicable.
 - 6. The user shall be permitted to start or pause the viewing of events within each display tile.
- L. Display Tile Packing and Unpacking:
- 1. The User interface shall support single-click unpacking and packing for ALPR hits, ALPR

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- reads, areas, doors, zones, camera sequences, and alarms.
 2. The packing and unpacking of entities shall allow operators to quickly obtain additional information and camera views of a specific entity.
 3. The unpacking of an entity shall display associated entities. For example, unpacking a door with multiple associated cameras shall display all cameras associated with that door. Unpacking shall reconfigure the display tiles to be able to display all associated entities. For example, unpacking a door (or a zone or alarm) that is currently in a 1 x 1 tile configuration and that has 3 cameras tied to it will create a 1 x 3 display tile arrangement for viewing all associated entities.
 4. Packing will return the display to the original tile pattern.
- M. Visual Tracking:
1. The User interface shall support the ability to manually track a moving target with the single click of a button.
 2. The ability to switch from one camera view to an adjacent camera shall be done within a single display tile.
 3. Switching between camera streams shall be accomplished by simply clicking on a semi-transparent shape or overlay.
 4. Visual tracking shall be available with both live and recorded video.

2.14 SERVER (OR EQUIVALENT APPLIANCE) ADMINISTRATOR USER INTERFACE REQUIREMENTS

- A. The Server (or equivalent appliance) Administrator shall be used to configure the SSM and the Directory Role (main configuration) and its database(s), to apply the license, and more.

2.15 UNIFIED WEB CLIENT (UWC) GENERAL REQUIREMENTS

- A. A. The USP shall support a unified web client (UWC) for access control and video.
 1. Alarms:
 - a. Alarm report
 2. Threat Level.

2.16 SMARTPHONE AND TABLET APP GENERAL REQUIREMENTS

- A. The USP shall support mobile apps for various off-the-shelf devices. The mobile apps shall communicate with the Mobile Server (or equivalent appliance) of the USP over any Wi-Fi or cellular network connection.
- B. Mobile apps shall communicate with the USP via a Mobile Server (or equivalent appliance) Role (MSR). All communication between the mobile apps and MSR shall be based on standard TCP/IP protocol and shall use the TLS encryption with digital certificates to secure the communication channel.
- C. Supported device manufacturers shall include (refer to Mobile App specifications for latest compatibility list):
 1. Apple devices running iOS 13.0 or later
 2. Android devices 10.0 or later
- D. It shall be possible to download the mobile apps from the Central application store (Apple iTunes App Store, Google Play).

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- E. It shall be possible to push configuration to the mobile device through a Mobile Device Management solution.
- F. Functionalities:
 - 1. Core
 - a. Ability to logon/logoff to the USP using an authorized user profile of the system.
 - b. Ability to support passive authentication from a single sign-on provider (OpenID Connect or SAML2 identity provider or equivalent system).
 - c. Ability to use biometric features (thumbprint, face ID, etc.) to perform connection to the system.
 - d. Ability to change the picture or the password of the user of the mobile app.
 - e. Ability to view the current Threat Level of the system.
 - f. Ability to change the current Threat Level of the system.
 - g. Ability to execute hot actions configured in the user profile.
 - h. Ability to view entities from the USP:
 - 1) Cameras
 - 2) Doors
 - 3) ALPR cameras
 - 4) Web Tile Plugins
 - 5) Layouts
 - 6) Camera Sequences
 - 7) Macros
 - 8) Maps (geographical maps only)
 - i. Ability to navigate the system hierarchical view of the entities and search entities in the system.
 - 2. Video
 - a. Ability to view live and recorded video from the cameras of the USP. A maximum of four cameras shall be displayed.
 - b. Ability to view video in native format (H.264).
 - c. Ability to display live and recorded video side-by-side for a specific camera.
 - d. Ability to perform digital zoom on cameras.
 - e. Ability to perform actions on cameras such as add a bookmark, control a PTZ, control the iris/focus function, save a snapshot, start/stop recording.
 - f. Ability to view camera layouts.
 - g. Ability to view camera sequences.
 - h. Ability to run a camera events report.
 - i. Ability to change the video quality on the cameras displayed on the mobile app.
 - j. Ability to use the camera of the smartphone and stream a live video feed to a video recorder in the system.
 - 3. Access Control
 - a. Ability to view the door state ad door lock state.
 - b. Ability to perform actions on a door such as unlock the door, set the door in maintenance mode, override the door unlocking schedule.
 - c. Ability to monitor live cardholder activities per door, such as cardholder name, pictures, access denied and reason for access denied.
 - 4. Automatic License Plate Recognition
 - a. Ability to view live events raised by an ALPR camera.
 - b. Ability to view the read image, context image, and all metadata captured by the ALPR camera.
 - c. Ability to run an ALPR event report.
 - d. Ability to add a license plate to a hotlist on the system.

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5. Alarm Management
 - a. Ability to receive push notifications to notify mobile operators that an alarm was received.
 - b. Ability to view all active alarms assigned to the mobile operator.
 - c. Ability to perform action on an alarm such as acknowledge, forward, or alternate-acknowledge an active alarm.
 - d. Ability to view entities attached to the alarm.
6. Map
 - a. Ability to display a geographic map with USP entities geo-located on the map.
 - b. Ability to view any entity configured on the map.
 - c. Ability to search entities or location on the map.
- G. It shall be possible to send a message from the client user interface to a mobile operator.
- H. It shall be possible to send a live or playback video sequence from the client UI to a mobile operator.
- I. It shall be possible to view mobile operators who enabled location tracking on a map in the system. The location of the mobile operator should be updated in real time.

2.17 HEALTH MONITOR

- A. The USP shall monitor the health of the system, log health-related events, and calculate statistics.
- B. USP services, roles, agents, units, and client apps will trigger health events.
- C. The USP shall populate the Windows Event Log with health events related to USP roles, services, and client apps.
- D. A dedicated role, the Health Monitoring Role, shall perform the following actions:
 1. Monitor the health of the entire system and log events.
 2. Calculate statistics within a specified time frame (hours, days, months).
 3. Calculates availability for clients, server (or equivalent appliance)s and video/access/ALPR units.
- E. A Health Monitoring task and Health History reporting task shall be available for live and historical reporting.
- F. A Health Monitoring dashboard task shall be available in the client application user interface to provide a live display, such as pie charts and event lists, for quick visual assessment on the general health of the system.
- G. A web-based, centralized health dashboard shall be available to remotely view unit and role health events of the USP.
- H. Detailed system care statistics will be available through a web-based dashboard providing health metrics of USP entities and roles, including Uptime and mean-time-between-failures.
- I. All health events raised in the system can be used for automating the USP event/action management.
- J. Health events shall be accessible via the SDK (can be used to create SNMP traps).

2.18 ALTERNATE – LPR LICENSE PLATE RECOGNITION

- A. A. SharpV All in one Cameras
 1. Equipment is designed to provide automatic license plate reading (ALPR) functionality.
 2. Each unit contains 2 cameras, an illumination source, and a processor.
 3. Communication with units is via Ethernet.
 4. ALPR engine can be localized to enhance performance.
 5. Database of international contexts available.
 6. High resolution (1280 X 960 ((1.2Mpx)) progressive scan Monochrome CCD ALPR camera.

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7. Variable Focal lens capable of 8.5mm to 50mm.
 8. Pulsed-infrared illumination for high performance automatic license plate reading (ALPR).
 9. Automated exposure control based on feedback from the ALPR engine.
 10. High resolution (1280 X 960 ((1.2Mpx)) progressive scan color camera for video recording and overview imaging.
 11. Variable Focal lens capable of Standard-range option: 5 - 10mm (up to 65'/20m) or Long-range option: 12.5 - 50mm (up to 105'/32m).
 12. Integrated video capture hardware.
 13. Dual Opto-isolated Input/Outputs.
 14. Processing rates of 30 frames per second.
 15. Rugged, environmental enclosure and cabling designed for stationary applications.
 16. Onboard buffering of read data in case of network loss.
 17. Region of Interest to perform ALPR on a polygon cropped inside the field of view (FOV).
 18. Video encoding capabilities: MJPEG, 15FPS, 1280 X 960 (1.2Mpx).
 19. Network interface - 1 X 10/100/1000 Base-T Ethernet port.
 20. Advanced hardware image pre-processing that permits license plate recognition at full sensor frame rate.
 21. Available in Black or Security White.
 22. Processor – 1.91 GHz Intel Atom E3845 Quad core (2MB L2 cache), 4GB RAM.
 23. Operating system - Windows 10 Enterprise.
 24. Pulsed LED-based illumination: 20 m range (Standard) or 32 m range (Long-Range).
 25. Pulsed LED-based illumination: 850nm and 740nm wavelengths available.
 26. Tamper resistant with impact-proof front window.
 27. Includes Pan / tilt Videotec mount and Pelco adaptor.
 28. Operating temperature -40°F to 149°F (-40°C to 65°C).
 29. Storage Temperature -40°F to 185°F (-40°C to 85°C).
 30. Sealing: Waterproof to IP66/67 (1 m submersion for 48 hrs.).
 31. Power supply: PoE+ (Power-over-Ethernet - 802.3at Type 2 (25.5W)).
 32. Dimensions 2.5 X 7.6 X 8.5 inches (63 X 192 X 214 mm).
 33. Weight: 5.04 lbs. (2.29kg).
- B. Client Software Application
1. The CSA shall seamlessly merge automatic license plate recognition (ALPR) and video functionalities within the same user application. The VMS shall offer a complete and scalable video surveillance solution that shall allow cameras to be added on a unit-by-unit basis.
 2. The CSA shall support the ability to select multiple regions on a map and provide results that are common to all regions.
 3. The CSA shall allow the user to Protect a Read or Hit from deletion for a configurable period.
 4. The CSA shall allow the user to correct a Plate Read manually.
 5. The CSA shall present the user with a Simple Wizard for Hotlist creation.
 6. The CSA shall allow the user to create a Hotlist without the need for any attribute information other than license plate number.
 7. The CSA shall allow the user to search the configured hotlists for any data in any of the specified fields.
 8. The CSA shall allow the user to generate a read report specifically targeted to those reads that generated a hit.
 9. The CSA shall allow for map-based viewing of real-time read monitoring.
 10. The CSA shall allow the user to search for full or partial license plate numbers.
 11. The CSA shall allow the user to search for a license plate by using wildcards.
 12. The CSA shall allow the user to automate downloading Hotlists from an FTP/SFTP or HTTP/HTTPS server (or equivalent appliance) using username/password/certificate

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- authentication.
- 13. The CSA shall allow the user to customize the format of the Reports displayed on-screen.
- C. Surveillance User Interface (UI)
 - 1. The Surveillance UI shall provide an interface to support the following ALPR tasks and capabilities:
 - a. Monitoring and management of ALPR events and alarms.
 - b. Viewing of license plate picture(s) and context images.
 - c. Viewing of license plate data (e.g., license plate reads)
 - d. Verification of ALPR data against live and recorded video.
- D. Server (or equivalent appliance) Administrator User Interface Requirements
 - 1. The Server (or equivalent appliance) Administrator shall be used to configure the SSM and the Directory role (main configuration) and its database(s), to apply the license, and more.
 - 2. The Server (or equivalent appliance) Administrator shall be a web-based application. Through the Server (or equivalent appliance) Administrator, it shall be possible to access the SSM across the network or locally on the server (or equivalent appliance).
 - 3. Access to the Server (or equivalent appliance) Administrator shall be protected via login name, password, and encrypted communications.
 - 4. The Server (or equivalent appliance) Administrator shall allow the administrator (user) to perform the following functions:
 - a. Manage the system license.
 - b. Configure the database(s) and database server (or equivalent appliance) for the Directory role,
 - c. Activate/Deactivate the Directory role.
 - d. Manually back up the Directory role database(s) and/or restore the server (or equivalent appliance) database(s), as well as configure scheduled backups of the databases.
 - e. Define the client-to-server (or equivalent appliance) communications security settings.
 - f. Configure the network communications hardware, including connection addresses and ports.
 - g. Configure system SMTP settings (mail server (or equivalent appliance) and port).
 - h. Configure event and alarm history storage options.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with the manufacturer's instructions and recommendations for installation of all products.
- B. Provide all system wiring between all components as directed by the manufacturer.
- C. Mount all camera rough-ins in the approximate locations shown on the drawings. Coordinate installation with other trades and utilities in the vicinity. Cameras containing fixed lenses, moved by more than 1'-0" from their location shown on the drawings shall have a new lens calculation performed by the vendor. Provide Engineer with results of lens calculation before proceeding with installation.
- D. All low voltage security shall be routed with other low voltage cabling and shall use the cable tray to the fullest extent where applicable.
- E. Cabling shall be plenum rated when installed outside of conduit in plenum ceilings.
- F. Provide three-sided pre-finished metal hood and seal to wall where conduit penetrates exterior wall.
- G. The contractor must provide owner with qty (5) iterations of graphic user interface programming sessions. Final software configuration/programming of system integration will require owner/contractor consultation and sign-off approval.

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3.2 FIELD QUALITY CONTROL

- A. Where these specifications require a product or assembly without the use of a brand or trade name, provide a product that meets the requirements of the specifications, as supplied and warranted by the system vendor. If the product or assembly is not available from the system vendor, provide product or assembly as recommended by the system vendor.
- B. Periodic observations will be performed during construction to verify compliance with the requirements of the specifications. These services do not relieve the Contractor of responsibility for compliance with the Contract Documents.
- C. It shall be the Contractor's responsibility to correct all inadequate picture quality issues prior to acceptance of the system.

3.3 MANUFACTURER'S FIELD SERVICES

- A. Installation shall be performed by a factory-trained and certified Contractor/Installer.
- B. The Installer shall include labor for all final camera adjustments to be made at the time of system acceptance at the discretion of the owner/engineer. All adjustments are required to be completed and accepted by the owner prior to project closeout.

3.4 SYSTEM ACCEPTANCE

- A. The vendor shall submit for review a formal acceptance and system checkout program. The system checkout procedures shall include all system components. The Contractor shall perform the tests and document all results under the supervision of the manufacturer's system engineer.

3.5 SYSTEM DOCUMENTATION

- A. Complete documentation shall be provided for the system. The documentation shall describe:
 - 1. Camera locations and associated cable routing.

3.6 SYSTEM TRAINING

- A. Installer shall provide a minimum of 40 hours of training.

END OF SECTION 282000

SECTION 282316 – VIDEO INTERCOM SYSTEM (PERFORMANCE SPEC)

PART 1- GENERAL

1.1 PERFORMANCE STATEMENT

- A. **The basis of design shall be Verkada or an authorized equivalent. Each proposal from alternate manufacturers will be subject to individual evaluation by both the owner and the owner's representative as part of the contract's requirements.**
- B. This specification section and the accompanying video intercom system-specific Contract Documents are performance based, describing the minimum material quality, required features, and operational requirements of the system. These documents do not convey every wire that must be installed and every equipment connection that must be made. Based on the equipment constraints described and the performance required of the system, as presented in these documents, the vendor and the Contractor are solely responsible for determining all wiring, programming and miscellaneous equipment required for a complete and operational system.

1.2 RELATED DOCUMENTS

- A. The requirements of the General Conditions, Supplementary Conditions, Division 0-28, and Drawings apply to all Work herein.
- B. Requirements of the following Division 0-28 Sections apply to this section:
 - 1. Structured Cabling Systems – Section 271000
 - 2. Access Control System - Section 281300
 - 3. Video Surveillance – Section 282300

1.3 WORK INCLUDED

- A. Install a new video access/intercom system at the front entrance and controlled at the main office where noted on the Drawings. Contractor shall provide and install IP video intercom device, cabling, and programming at main mechanical gate entrances. Contractor shall ensure a fully functional video intercom system with integration to Genetec's unified user interface platform – where applicable. System shall be based on IP VIDEO INTERCOM equipment. The installation contractor shall be licensed by the State of Texas as a security service contractor. The installation contractor shall be a verifiable IP VIDEO INTERCOM Dealer. Technicians shall be Bosch/Radionics and IP VIDEO INTERCOM trained and certified in the various applications necessary.
- B. NOTE: For any campus location without an existing video intercom system, contractor shall provide, install, and program a turnkey IP video intercom IX series system. Contractor shall include new cabling to all IP video intercom IX devices / headend equipment.
- C. ALTERNATE #1 – For campuses with existing IP video intercom AX series systems, contractor shall price turn-key system installation to integrate new IP based video intercom system with the unified user platform. Contractor shall include all necessary converters, cabling, hardware, and programming.

1.4 CODES AND STANDARDS

SECTION 282316 – VIDEO INTERCOM SYSTEM (PERFORMANCE SPEC)

- A. The system shall comply with the applicable Codes and Standards as follows:
1. National Electric Code, Article 760.
 2. National Fire Alarm Code (NFPA 72).
 3. Life Safety Code (NFPA 101)
 4. Administrative Council for Terminal Attachments (ACTA):
 5. ANSI/TIA-968-A-2002 Technical Requirements for Connection of Terminal Equipment to the Telephone Network.
 6. American National Standards Institute (ANSI):
 - a. ANSI C63.4 Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
 7. Fire Marshal (FM):
 - a. Title XX, Texas Code of Regulations, Building Material Listing Program (BML).
 8. Federal Communications Commission (FCC):
 - a. Title 47 C.F.R. Part 15; Class B – Radiated and Conducted Emissions.
 - b. Title 47 C.F.R. Part 68; rules governing the connection of Terminal Equipment (TE) to the Public Switched Telephone Network (PSTN).
 9. The National Institute of Standards and Technology of the United States of America (NIST):
 - a. Federal Information Processing Standards Publications 197 (FIPS 197) – Advanced Encryption Standard (AES).
 10. International Organization For Standardization (ISO):
 - a. 9001 - Quality System.
 11. Underwriters Laboratories, Inc. (UL):
 - a. UL 50 - Enclosures for Electrical Equipment.
 - b. UL 294 – Access Control System Units.
 - c. UL 365 - Police Station Connected Burglar Alarm Units and Systems.
 - d. UL 609 - Local Burglar Alarm Units and Systems.
 - e. UL 864 - Control Units System for Fire-Protective Signaling System.
 - f. UL 985 - Household Fire Warning System Units.
 - g. UL 1023 - Household Burglar Alarm System Units.
 - h. UL 1076 – Proprietary Burglar Alarm Units and Systems
 - i. UL 1610 - Central Station Burglar-Alarm Units.
 - j. UL 60950-1 - Information Technology Equipment - Safety.
 - k. UL 636 – Hold up alarms
 12. Local & State Building Codes
 13. Requirements of Local Authorities having Jurisdiction
 14. Requirements of American Disabilities Act (Public law 101-336).
 15. Texas Accessibility Standards (T.A.S.)
 16. State Fire Marshall.
 17. Texas Insurance Code.

SECTION 282316 – VIDEO INTERCOM SYSTEM (PERFORMANCE SPEC)

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS AND INSTALLERS

- A. Acceptable Manufacturer: Verkada or approved equivalent.

2.2 SYSTEM MODULES / COMPONENTS

- A. IP VIDEO INTERCOM master monitor with color display.
- B. IP VIDEO INTERCOM Audio Video Master Station.
- C. IP VIDEO INTERCOM Central Exchange Unit.
- D. Flush mount IP audio+video exterior entry intercom.
- E. IP VIDEO INTERCOM surface mounted, vandal resistant call station with color camera.
- F. IP VIDEO INTERCOM Input/output door release relay
- G. IP VIDEO INTERCOM Surface mount box
- H. Any and all accessories necessary for a complete operable system.
- I. Provide wiring interface between access system and electric locks, panic hardware, gate operators, and other equipment provided under other division 28 Specification Sections.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Should follow Division 27 District Network Wiring and Install Standards

3.2 CABLE PATHWAYS

- A. Cable Support:
 - 1. Should follow Division 27 05 29, 27 05 39, 27 05 4: Hanger and Supports for Communication System Cable Tray for Communication Systems, Underground Pathways and Structures for Communication System, respectfully.
- B. Conduit / Raceway:
 - 1. Should follow Division 27 05 28 Pathways for Communication Systems

3.3 WARRANTY

- A. Entire system shall be warranted against defects in materials and workmanship for a period of one (1) year from the date of substantial completion.

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3.4 SHOP DRAWINGS / RECORDS / TESTING

- A. Contractor shall provide shop drawing noting all equipment to be provided Also provide system wiring diagram showing each device and wiring connection. As built drawings shall be provided after construction with actual locations of devices, cable routing, power supply locations and any other equipment locations. Refer to Division 26 for additional shop drawing requirements.
- B. Upon completion of system testing in order to confirm proper operation, contractor shall demonstrate operation of the system to an IDEA representative and perform any test or function requested.

END OF SECTION 282316

SECTION 284211 - VAPE AND ALARM CONTROL SYSTEM – (PERFORMANCE SPEC) ALT.

PART 1 – GENERAL

1.1 PERFORMANCE STATEMENT

- A. **The basis of design shall be Verkada or an authorized equivalent. Each proposal from alternate manufacturers will be subject to individual evaluation by both the owner and the owner's representative as part of the contract's requirements.**
- B. This specification section and the accompanying video intercom system-specific Contract Documents are performance based, describing the minimum material quality, required features, and operational requirements of the system. These documents do not convey every wire that must be installed and every equipment connection that must be made. Based on the equipment constraints described and the performance required of the system, as presented in these documents, the vendor and the Contractor are solely responsible for determining all wiring, programming and miscellaneous equipment required for a complete and operational system.

1.2 SYSTEM DESCRIPTION

- A. General Requirements
 - 1. ALTERNATE – The Vape sensor and system programming scopes are an alternate as a whole. Contractor shall provide pricing for a turnkey vape sensor with programming to integrate the vape sensor data to Owner's unified user interface platform. Vape sensors will be placed in particular restrooms, refer to drawings for exact vape sensor locations. Contractor shall coordinate with owner on exact sensor configurations prior to install.
 - 2. The specified unit shall be of manufacturer's official product line, designed for commercial and/or industrial 24/7/365 use.
 - 3. The specified unit shall be based upon standard components and proven technology using open and published protocols.
- B. Sustainability
 - 1. The specified unit shall be manufactured in accordance with ISO 9001.
 - 2. The specified unit shall be compliant with the EU directives 2011/65/EU (CE).
 - 3. The specified unit shall be compliant with the EU regulation 1907/2006 (REACH).
 - 4. The specified unit shall be Halogen-free in accordance with IEC 61249-2-21.

1.3 CERTIFICATIONS AND STANDARDS

- A. General abbreviations and acronyms
 - 1. AES: Advanced Encryption Standard
 - 2. API: Application Programming Interface
 - 3. AQI: Air Quality Index
 - 4. Aspect ratio: A ratio of width to height in images
 - 5. BACnet: Building Automation and Control (BAC) Network
 - 6. Bit Rate: The number of bits/time unit sent over a network
 - 7. Bonjour: Enables automatic discovery of computers, devices, and services on IP networks.
 - 8. DHCP: Dynamic Host Configuration Protocol
 - 9. DNS: Domain Name System
 - 10. FPS: Frames per Second

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11. FTP: File Transfer Protocol
 12. IEEE 802.1x: Authentication framework for network devices
 13. HTTP: HyperText Transfer Protocol
 14. HTTPS: Hypertext Transfer Protocol Secure
 15. IAQ: Indoor Air Quality
 16. IP: Internet Protocol
 17. ISO: International Standards Organization
 18. LAN: Local Area Network
 19. LED: Light Emitting Diode
 20. MPEG: Moving Picture Experts Group
 21. MJPEG: Motion JPEG (M-JPEG or MJPEG) is a video compression format in which each video frame or interlaced field of a digital video sequence is compressed separately as a JPEG image.
 22. Multicast: Communication between a single sender and multiple receivers on a network
 23. NTP: Network Time Protocol
 24. PoE: Power over Ethernet (IEEE 802.3af Class 3 Compliance, 80 mA) standard for providing power over network cable
 25. QoS: Quality of Service
 26. RTSP: Real Time Streaming Protocol
 27. REST APIs: Representational State Transfer - Application Programming Interface
 28. SMTP: Simple Mail Transfer Protocol
 29. SNMP: Simple Network Management Protocol
 30. SSL: Secure Sockets Layer
 31. TCP: Transmission Control Protocol
 32. TLS: Transport Layer Security
 33. Unicast: Communication between a single sender and single receiver on a network
- B. The specified unit shall carry the following EMC approvals:
1. EN 55024:2010
 2. FCC 47 CFR Part 15 - Subpart B Class A
 3. EN 55032:2012 + AC:2013
 4. ICES-003 ISSUE 6:2016
- C. The specified unit shall meet the following product safety standards:
1. IEC / EN / CE / WEEE / UL 60950-1 / CUL 60950-1
- D. The specified unit shall meet the following standards
1. Networking:
 - a. IEEE 802.3af Class 3 Compliance, 125 mA)
 - b. IEEE 802.1X (Authentication)
 - c. IPv4 (RFC 791)
 - d. IPv6 (RFC 2460)
 - e. WiFi
 2. Mechanical Environment:
 - a. IEC/EN 62262
 - b. Vandal Resistance with at least an IK-10 rating

1.4 QUALITY ASSURANCE

- A. All installation, configuration, setup, program and related work shall be performed by

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electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.

- B. The contractor or designated sub-contractor shall submit credentials of completed manufacturer certification, as proof of the knowledge.
- C. The specified unit shall be manufactured in accordance with ISO9001.

1.5 WARRANTY

- A. The manufacturer shall provide warranty for (1) one year and optional extended warranty for the sensor for a total period of three years.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Sensor shall be IP-based and comply with established network standards.
- B. Sensors shall be powered by the switch utilizing the network cable. Power injectors (midspans) shall be provided by the contractor when required for proper operation.
- C. Sensors shall be fully supported by an open and published API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications.
- D. Contractor shall integrate and program sensor data to function within the Genetec unified user platform.

2.2 SENSOR SCHEDULE

- A. Sensors listed below shall be supplied by a single manufacturer.
- B. The sensor manufacturer and model numbers will be as follows:
 - 1. IPVideo Corporation Halo Smart Sensor v2.0.

2.3 SENSORS

- B. Interior mounted Smart Sensor
 - 1. The sensor shall meet or exceed the following design specifications:
 - a. The sensor shall operate on an open source; Linux-based platform and include a built-in web server.
 - b. The sensor shall provide local database storage utilizing internal memory.
 - c. The sensor shall be manufactured with an IP30-rated, IK10 impact-resistant, polycarbonate casing.
 - d. The sensor certified to operate in plenum space.
 - 2. The sensor shall meet or exceed the following performance specifications:
 - a. Detection and measurement of
 - 1) Particulates Size 1 μm particulates $\mu\text{g}/\text{m}^3$
 - 2) Particulates Size 2.5 μm particulates $\mu\text{g}/\text{m}^3$
 - 3) Particulates Size 10 μm particulates $\mu\text{g}/\text{m}^3$

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- 4) Carbon Dioxide Equivalents
 - 5) Total Volatile Organic Compounds
 - 6) Carbon Monoxide
 - 7) Ammonia
 - 8) Temperature/Humidity
 - 9) Barometric Pressure
 - 10) Light Level
 - 11) Sound Levels
 - 12) Tamper
 - 13) Vape
 - 14) Vape THC
 - 15) Spoken Keyword
 - 16) Gunshot
 - 17) Aggression
 - 18) Masking / Spray Paint
 - 19) Indoor Air Quality, AQI: Air Quality Index
 - 20) Scheduling
 - a) Shall have day and time selection for notification of detection.
 - b) Shall have the scheduling be adjustable separately for each detection type.
- b. Audio microphones
- 1) Shall have (2) two microphones
 - 2) Sensor shall perform audio analysis only
 - 3) Sensor shall not record live audio stream
- c. LED Indicator Light
- 1) The sensor shall have a multi-color LED indicator.
 - 2) Speaker
- d. The sensor shall have a speaker.
- 1) Encoding of Data Screen
- e. The sensor shall support the following video encoding algorithms:
- 1) Motion JPEG encoding of 1 frame per second.
 - 2) Video Transmission
- f. The sensor shall allow for video to be transported over:
- 1) HTTP (Unicast)
 - 2) HTTPS
 - 3) RTSP
- g. User Interface
- 1) Web server
 - a) The sensor shall contain a built-in web server making video and configuration available to multiple clients in a standard operating system and browser environment using HTTP and HTTPS, without the need for additional software.
 - 2) IP addresses
 - a) The sensor shall support both fixed IP addresses and

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- dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
 - b) The sensor shall allow for automatic detection of the sensor based on UPnP and Bonjour when using a PC with an operating system supporting this feature.
 - c) The sensor shall provide support for IPv4.
 - d) The sensor shall provide support for IPv6.
 - 3) Event functionality
 - a) The sensor shall be equipped with an integrated event functionality, which can be triggered by:
 - (1) Sensor tampering
 - (2) Manual Trigger/Virtual Inputs
 - (3) Event threshold met
 - b) Response to triggers shall include:
 - (1) Relays Outputs
 - (a) (2) Two relay outputs
 - (b) Normally Open or Closed
 - (c) Rated at 48VDC at 1 amp
 - (d) Status Light
 - (e) Speaker
 - (2) Pre-Recorded Files
 - (3) Programmable
 - (a) Send notification, using HTTP, HTTPS, TCP, RTSP, or Email
 - (b) Send images, using FTP, HTTP, HTTPS, RTSP, network share or email
 - (4) Identification in data logs
 - (a) Protocol
- h. The sensor shall incorporate support for at least IPv4/v6, HTTP, HTTPS, SSL/TLS, TCP, ICMP, SMTP, DHCP, UPnP, ARP, DNS, NTP, RTSP, Bonjour.
 - 1) The SMTP implementation shall include support for SMTP authentication.
 - 2) Security
- i. The sensor shall be in compliance with Texas’s law for IoT device cyber security, Texas Civil Code Section XX.
 - 1) The sensor shall restrict access to the built-in web server by usernames and passwords at two different levels.
- j. The sensor shall have minimum username and password criteria requirements.
 - 1) Configurability
- k. The sensor shall permit configuration of Event thresholds, time requirements, filters, and combinational Events. Built in test functions shall be provided.

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- 1) The sensor shall permit configuration live viewing elements, live viewing style/colors, and live viewing ranges
3. Sensor shall permit configuration of Actions including lighting patterns and colors, audible alerts, relay outputs, Email alerts, SMS alerts, and TCP/IP socket alerts.
4. Sensor shall permit configuration of user accounts, network parameters, SMTP connection parameters with built in test function.
 - a. API support & Additional Third-Party Integrations for Genetec
 - 1) The sensor shall be fully supported by an API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications.
 - a) The USP shall support multiple approaches to integrating third party systems. These shall include: Software Development Kits (SDKs), REST-based Web Service SDKs, RTSP Service SDKs, and more. (Specifier, Professional and up, SDK package and license required)
 - b) The USP architecture shall support the addition of new connectors to integrate to third party system integration, such as: (Specifier, refer to the website for how these are licensed, for an updated list of available Third-Party Integrations, please refer to the supported plugin guide)
 - c) Third party video systems
 - d) Third party access control systems
 - e) ALPR integrations with pay stations, permit vendors, pay-by-phone vendors, and ticketing vendors
 - f) Building management systems
 - g) Access Control ecosystem (such as IDscanner, card synchronization, Guardtour, Morpho Biometrics, Advanced Enrollment)
 - h) Transaction monitoring (POS, Barcode scanning, ATM)
 - i) Industrial IoT: Data ingestion from external devices through standard communication protocols (Modbus, BACnet, OPC, SNMP, HTTP Server, MQTT Client, TCP Server)
 - j) Industrial Protocol Interface: Data exposure from GSC to external protocol interfaces using standard communication protocols (BACnet, SNMP)
 - k) Human resource management systems (HRMS)
 - l) Intelligent Keys (Salto SVN, Medeco XT, CLIQ, ILOQ (future))
 - m) Gunshot Detection (Shot Spotter, Guardian GunShot)
 - n) Dynamic Logbook: Customizable forms with reporting capabilities
 - 2) Installation and maintenance
 - a) The sensor shall provide built-in means which allows the assignment of IP addresses, upgrade of firmware and backup of the sensor' configuration without use of external software.
 - b) The sensor shall be supplied with Windows-based management software which allows the assignment of IP addresses, upgrade of firmware and backup of the sensor'

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- configuration.
 - c) Sensor shall provide means to restore configuration with selection of desired sections of configuration to be restored.
 - d) The sensor shall allow updates of the software (firmware) over the network, using FTP, HTTP, or HTTPS.
 - e) Sensor shall provide logging and means to download daily files of Events, System States, and System Operation.
 - f) The sensor shall accept external time synchronization from an NTP (Network Time Protocol) server.
 - g) The sensor shall store all customer-specific settings in a non-volatile memory that shall not be lost during power cuts or soft reset.
 - h) Sensor shall provide a built-in complete system test that can be performed at any time.
- 3) Hardware interfaces
- a) Network interface
 - (1) The sensor shall be equipped with one 10BASE-T/100BASE-TX Fast Ethernet-port using a shielded RJ45 connector and shall support auto negotiation of network speed (100 MBit/s and 10 MBit/s) and transfer mode (full and half duplex).
 - b) Enclosure
 - (1) The sensor shall:
 - (a) Be manufactured with an IP30-rated, IK10 impact-resistant, polycarbonate casing.
 - (b) Secure the outer cover with anti-tamper TORX screws
 - (c) Be provided with self-locking mounting features for installation in materials up to 3/4" (19MM) in thickness.
- 4) Power
- a) Power over Ethernet IEEE 802.3af
- 5) Environmental
- a) Operate in a temperature range of 0 °C to +50 °C (+32°F to 122°F).
 - b) Operate in a humidity range of 0–90% RH (non-condensing).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The Contractors or subcontractors' main resources within the project shall carry proper professional certification or training issued by the manufacturer.

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- B. The Contractor shall carefully follow instructions in documentation provided by the manufacturer to ensure all steps have been taken to provide a reliable, easy-to-operate system.
- C. All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
- D. All firmware found in products shall be the latest and most up to date provided by the manufacturer.
- E. All equipment requiring users to log on using a password shall be configured with individually unique password/passwords. No system/product default passwords shall be allowed.
- F. A proper installation shall meet NEC (National Electrical Code – US only) per the guidelines of that year's revision. When properly installed equipment meets Low Voltage, Class 2 classification of the NEC.

END OF SECTION 284211