

SPECIFICATIONS FOR:

FIRE PANEL REPLACEMENT PROJECT

ROLLINS ELEMENTARY SCHOOL
950 KANE STREET
AURORA, IL 60505



OWNER:

EAST AURORA SCHOOL DISTRICT #131
310 SEMINARY AVENUE
AURORA, IL 60505

PREPARED BY:

CORDOGAN, CLARK & ASSOCIATES INC.

PROJECT NUMBER: 24-1056
BID SET: JANUARY 14, 2025

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

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JANUARY 14, 2025

SECTION 002000 – NOTICE TO BIDDERS

- A. East Aurora School District (hereinafter referred to as the Owner) will receive bids for the following project until 10:30 A.M., local time, on January 30, 2025, at 310 Seminary Avenue, Aurora, IL 60505

Project #24-1056 – Fire Panel Replacement Project at Rollins Elementary School.

- B. Bids will be publicly opened and read at the time and location noted above.
- C. Contract Documents may be obtained by Bidding Contractors from Vesco Reprographics 630-896-2115 or <http://www.cordoganclarkplanroom.com>, on or after, January 14, 2025.
- D. All bids must be accompanied by a Bid Security in the form of Bid Bond in the amount of 10% of the Base Bid (plus additive alternates) made payable to the Owner.
- E. A mandatory pre-bid conference will be conducted virtually on January 16, 2025, at 10:30 am. See Section 002513 "Prebid Meetings" for additional information regarding the meeting.
- F. Pre-bid walk-throughs will be held by appointment only, between the dates of January 16-21, 2025.

Rollins Elementary School, 950 Kane Street., Aurora, IL 60505.

- G. For site access after the pre-bid meeting, contact Luca Muench lmuench@cordoganclark.com
- H. All bidders are required to visit the sites. The project sites are available for inspection on a limited basis after the mandatory pre-bid meeting.
- I. The Contractor shall pay, if applicable, not less than the prevailing rate of wages as established, to all laborers, workmen and mechanics in the performance of Work under this Contract in accordance with "An Act regulating wages of laborers, mechanics and other employed under contracts of Public Works." 820 ILCS 130/1 et seq.
- J. The Owner reserves the right to reject any and all bids, to waive any informality in bidding, or accept the bid that, in his opinion, will serve his best interests.
- K. This Notice is written in the name of the Owner by Cordogan Clark & Associates, Inc.

END OF NOTICE TO BIDDERS

DOCUMENT 002513 - PREBID MEETINGS

1.1 PREBID MEETING

A. Architect will conduct a Prebid meeting as indicated below:

1. Meeting Date: January 16, 2025.
2. Meeting Time: 10:30 a.m., local time.
3. The meeting will be conducted remotely via Microsoft Teams. Microsoft Teams can be downloaded here: <https://teams.microsoft.com/downloads>

B. Attendance: **Bidders please send the architect an email address to be used for the video conference pre-bid meeting.** Send email addresses to: sdralle@cordoganclark.com

Once the architect receives the email, an invitation to a Microsoft Teams meeting will be sent to that email address. This will allow the bidder to electronically access the meeting via phone or computer. **Microsoft Teams Meeting: The call in number is 1-708-298-4485, Conference ID: 978 720 828#**

Attendance:

1. Prime Bidders: Attendance at Prebid meeting is **mandatory**.
2. Subcontractors: Attendance at Prebid meeting is **recommended**.
3. Notice: Bids will only be accepted from prime bidders represented on Prebid Meeting sign-in sheet.

C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of two business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:

1. Procurement and Contracting Requirements:

- a. Advertisement for Bids.
- b. Bidder Qualifications.
- c. Bonding.
- d. Insurance.
- e. Bid Security.
- f. Bid Form and Attachments.
- g. Bid Submittal Requirements.
- h. Bid Submittal Checklist.
- i. Critical Path Method schedule
- j. Notice of Award.

2. Communication during Bidding Period:
 - a. Obtaining documents.
 - b. Access to Project Web site.
 - c. Bidder's Requests for Information.
 - d. Bidder's Substitution Request/Prior Approval Request.
 - e. Addenda.
 3. Contracting Requirements:
 - a. Agreement.
 - b. The General Conditions.
 - c. The Supplementary Conditions.
 - d. Other Owner requirements.
 4. Construction Documents:
 - a. Scopes of Work.
 - b. Temporary Facilities.
 - c. Use of Site.
 - d. Work Restrictions.
 - e. Alternates, Allowances, and Unit Prices.
 - f. Substitutions following award.
 5. Separate Contracts:
 - a. Work by Owner.
 - b. Work of Other Contracts.
 6. Schedule:
 - a. Project Schedule.
 - b. Contract Time.
 - c. Other Bidder Questions.
 7. Site/facility visit or walkthrough.
 8. Post-Meeting Addendum.
- E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
1. Sign-in Sheet: Minutes will include list of meeting attendees.
 2. List of Plan holders: Minutes will include list of plan holders.

END OF DOCUMENT 002513

SECTION 003000 - INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 SUMMARY

Multiple Lump sum proposals will be received to construct the project in accordance with the drawings, specifications, and project manual prepared by Cordogan, Clark & Associates, and all other applicable contract documents.

1.2 QUALIFICATION REQUIREMENTS

Contractors are required to submit qualifications with their proposal. Proposals will be evaluated and awarded based on proposals received by qualified contractors. See the attached exhibits for required qualification documentation and the proposal award. Although price is a major consideration in the award of the bid, the Client may consider and base the award on other factors, including, but not limited to the following:

1. The ability, capacity and skill of the bidder to perform services or provide the goods required.
2. Whether the bidder can perform the contract or provide the service promptly, or within the time specified, without delay or interference.
3. The character, integrity, reputations, judgment, experience and efficiency of the bidder.
4. The quality of performance of previous contracts or services.
5. The previous and existing compliance by the bidder with laws and ordinances relating to the contract or service.
6. The sufficiency of the financial resources and ability of the bidder to perform the contract or provide the service.
7. The quality, availability and adaptability of the supplies, or services to the particular use required by the Owner.
8. The ability to achieve or exceed any LEED requirements that may be set forth within the bidding documents.
9. The ability to self-perform the primary scope of work under contract.
10. EASD #131 requires finger printing and background checks for all Contractors working in the School District. It is the Contractors responsibility for all associated costs for the finger printing and background checks.

1.3 SUBMISSION OF BIDS

Proposals shall be made in accordance with the following instructions. Proposals shall be delivered before 10:30 A.M., local time, on January 30, 2025. Any bids received after this time may be rejected. Proposals must be made upon the form provided within and shall be addressed to:

East Aurora School District #131
310 Seminary Avenue
Aurora, IL 60505
Attention: Ashraf Kawash, Director of Buildings & Grounds

The envelope shall be plainly marked:

East Aurora School District #131
Project: Fire Panel Replacement Project
Do Not Open – Project #24-1056

Contracts may be awarded for each package in whole or parts.

1.4 AVAILABILITY OF DOCUMENTS:

Bid Package documents, drawings, and specifications shall be distributed electronically by the Construction Manager on or after January 14, 2025. Bidders may also contact the following reprographic provider to obtain the bid documents. Printing and shipping costs shall be the responsibility of the bidder:

Vesco Reprographic
1351 Aucutt Road
Montgomery, IL 60538
630.896.2115 tel.
630.897.6434 fax.
<http://www.cordoganclarkplanroom.com/>

Upon receipt of the Bid Package the bidder shall immediately check that all documents listed in item 1.7 of these instructions have been received. If any section is missing, contact the Construction Manager immediately.

1.5 MANDATORY PRE-BID CONFERENCE:

- A. A mandatory pre-bid conference will be conducted remotely via Microsoft Teams on meet January 16, 2025, at 10:30 am. See Section 002513 "Prebid Meetings" for additional information about the meeting.
- B. Pre-bid walk-throughs will be held by appointment only, between the dates of January 16 – 21, 2025.

Rollins Elementary School, 950 Kane Street, Aurora, IL 60505.

- C. For site access after the pre-bid meeting, contact Luca Muench lmuench@cordoganclark.com

1.6 SUBMISSION OF PROPOSAL

Each Bid submission shall contain the following in the order listed below:

1. Exhibit E: Bid Bond – ONE ORIGINAL AND ONE DUPLICATE
2. Section 004000 Bid Form – COMPLETE AND IN DUPLICATE

3. Section 003500 Requirements for Qualification (with supporting documents)
– COMPLETE AND IN DUPLICATE

Proposals shall be presented to the Owner for approval of selected contractors. Proposals may be rejected by the Owner as informal, unless properly signed in longhand by the bidder, or his authorized agent, and unless all dates, items and amounts called for in the Form of Proposal are furnished. Proposals which are not signed by the individual making them should have attached thereto, a Power of Attorney, evidencing authority to sign the Proposal in the name of the person for whom it is signed. Proposals which are signed for a Partnership should be signed in the firm name by required number of Partners to bind, or in the firm name by an Attorney-in-Fact. Proposals which are signed for a corporation should have the correct corporate name thereof and the signature of the President or other authorized officer of the corporation in longhand. If such proposal is signed by an official other than the President, authority of such to sign the attesting signature of the Secretary of the Corporation and the impression of the Corporate Seal.

Proposals will also be considered informal if the Form of Proposal contains any erasures or written memoranda qualifying the same. Any explanation or statement which the bidder wishes to make must be placed in the same envelope with the proposal but shall be written separately and independently and attached thereto. The Owner reserves the right to waive any or all irregularities or informalities. Proposals may be withdrawn on written or telegraphic requests received from bidders prior to the time fixed for opening of bids. Negligence on the part of the bidders in preparing their proposal confers no right for the withdrawal of the proposal after it has been opened.

The Owner reserves the right to (1) reject all bids; (2) reject only certain bids which are non-conforming or non-responsive to the bid requirements; (3) accept only a portion, part or specific items of work of all bids which are separately set forth on the bid proposal form and reject others; (4) add additional work items based on either schedule of value bid breakdown pricing or unit pricing set forth on the bid proposal form, as the Owner shall in its sole discretion determine to be in its best interests, and to award the contract to the responsible bidder submitting the lowest bid responsive to the bidding requirements. In the event of a rejection of a portion, part, or certain items of work, the bid of each bidder shall automatically be deemed reduced by the amount of such rejected part or item at the unit price or other cost designated therefore by that bidder on its submitted bid. The Owner shall have the right to accept Alternatives in any order or combination and to determine the low Bidder on the basis of the sum of the Base Bid, Voluntary Alternates, and Alternates accepted.

The Owner reserves the right to accept any and all bids and to permit corrections of any obvious and apparent errors in bidding. The Owner reserves the right to review the references of past performances of all Contractors to be used in the project. The Owner reserves the right to review these references and other materials and accept or reject any or all Contractors. It is agreed that this bid may not be withdrawn for a period of ninety (90) days from the submittal thereof.

It is neither the intent nor the purpose of these specifications to prohibit a reliable bidder from bidding or securing a contract for the proposed goods/services. However, the documents do outline the requirements for the goods/services best suited to the needs of the Owner. Exceptions to these specifications will be considered only as voluntary alternates. Each bidder whose proposal cannot conform to these specifications shall list in detail all exceptions or alternates to the attached specifications in the voluntary alternates section of the bid form. The acceptance of such exceptions or alternates shall, however, be judged solely within the discretion of the Owner.

Purchases of building material for incorporation into this project are exempt for the Illinois Retailer's Occupation Tax and Use Tax (Sales Tax). The Owner's Tax Exempt Number is E9984-4184-06. The bidder shall exclude such taxes from consideration in preparing his bid.

Proposals shall be presented to the East Aurora School District #131 Board of Education for approval of selected contractors on February 18, 2025. Contracts will be awarded upon approval by the Board.

1.7 EXAMINATION OF SITE AND CONDITIONS OF CONTRACT

Before submitting a proposal, each bidder shall inform himself of the conditions under which the work is to be performed, the site of the work, the obstacles which may be encountered and all other relevant matters concerning the work to be performed. Also, the bidder, if awarded the contract, shall not be allowed any extra compensation by reason of any matter or thing concerning which such bidder might have fully informed himself prior to the bidding. The project site is only available for inspection during the mandatory pre-bid meeting. Inspection of the site may not be available at any other time. Lack of additional site access shall not relieve the Bidder responsibility of the conditions under which the work is to be performed.

By submitting a proposal, each bidder agrees the Contract Documents have been examined, the site has been visited, all project conditions and limitations affecting the work have been noted and understands the nature of the work, general and local conditions, and accepts the contract as the form of the Contract Agreement between the Contractor and the Owner. The successful bidder's Contract Agreement may be assigned to the Construction Manager or the General Trades prime contractor. By submitting a bid, the successful bidder consents to this assignment. Include all costs related to your work affected by these conditions. No proposal will be entertained which is not based upon the complete contract documents consisting of the following:

- Specifications & Exhibits
- Form of Proposal Documents
- Requirements for Qualification Documents
- Accompanying Drawings
- Addenda, if any

Any written instructions in the Form of Addenda issued during the bidding period are to be included in the proposal, and will become part of the Contract Documents.

1.8 PERMITS & LICENSES

Successful Bidders shall be responsible for all necessary permits, licenses and fees associated with their work. The Owner will obtain the building permit only. All Bidders and their subcontractor(s) must be licensed with all entities having jurisdiction and shall obtain all required building permits prior to the start of any work. Any additional permits or fees required to perform the work shall be the responsibility of the performing trade.

1.9 BONDING

All Bidders shall be required to furnish a bid bond in the amount of Ten Percent (10%) of the contractor's proposed cost of construction. The Bid bond shall be required at the time of submittal of proposal. No proposal will be entertained which is not accompanied by a bid bond.

The successful bidder will be required to furnish a Performance and Payment Bond in the full amount of the Contract executed on A.I.A. Form A-312, "Performance Bond and labor and Material Payment Bond" prior to the start of any work. The Performance Bond shall: 1) serve as security for faithful performance of the work; and 2) guarantee the work against defective workmanship and material for a period of not less than one (1) year following acceptance of the work.

The Labor and Material Bond shall serve as security that all wages are paid and materials provided for the work are paid by the successful Bidder. For contract awards that are less than \$50,000.00, a Letter of Credit, in a form suitable to the Owner, may be submitted as performance security, instead of a Performance Bond and a Labor and Material Payment Bond. The Surety is to be approved by the Owner. The Contractor will pay for the cost of all Bonds. All Bids shall include cost of performance and payment bond.

1.10 TIME SCHEDULE

Each Prime Contractor is required to perform their work within the following Preliminary Construction Schedule. The Construction Manager anticipates an aggressive construction operation. By submitting a bid each Contractor guarantees they can meet the proposed Construction Schedule. If a Contractor is determined to be impeding the progress of the overall Project Schedule, the work delaying such progress will be passed over in the normal course of business, and the Contractor impeding the progress shall be responsible for installing the work under another means and paying for any additional cost, or damages resulting from such action. The Contractor shall assume multiple mobilizations may be required to perform their scope of work. All Bids shall include costs for the same. Substantial Completion Time Schedule:

1. Project Commencement: June 4, 2025
2. Substantial Completion: August 15, 2025

1.11 LIQUIDATED DAMAGES

The Owner or Architect is not to be held responsible for any damages incurred by the Contractor through the fault of any other contractor employed by the Owner. If the Contractor fails to deliver his materials in accordance with the completion schedule or as the progress of the work requires all expenses which are incurred in expediting the shipment of materials shall be paid for by the Contractor.

Failure to complete the Work on the dates set forth will result in significant economic losses to the Owner. Contractor agrees to perform the Work fully and in all things execute and finally complete the Work done before the scheduled dates as set forth. Should the Contractor fail to complete the Work within such time, Contractor agrees to pay and will apply to the Owner for each and every day of such delay in completion of the Work beyond the dates set forth, the sum of \$2,000.00 as liquidated damages. Liquidated damages may apply if the scheduled dates listed in the previous section are not met.

The Contractor acknowledges the difficulty in estimating the damages for loss of use but agrees that the amount set forth herein is a reasonable approximation of the Owner's loss due to loss of use per them of the property. The Contractor agrees that this amount is not a penalty. Such sum shall be deducted from the final payment due to Contractor. Should this amount exceed the sum due or to become due to the Contractor, then and in that event, Contractor shall be liable to Owner for such difference. The Contractor shall reimburse the Owner for all Architect fees for

additional services necessitated by Contractor's failure Substantial Completion within the time estimated in the Agreement and for more than one inspection for each Substantial Completion/Final Completion.

1.12 CHANGE ORDERS

The successful bidder shall be required to follow the Owner's guidelines for change order mark-ups, namely that any change order proposal submitted to the Architect for an increase to the contract sum shall be limited to a maximum of five percent (5%) of the cost of the additional materials and labor for the general conditions and profit of the Contract. This includes any increase to the Performance Bond and Labor and Material Payment Bonds. The Performance Bond and Labor and Material Payment Bonds are considered part of the general conditions costs.

1.13 SAFETY REQUIREMENTS

All Contractors and Subcontractors of any tier will be required to comply with the provisions of the "Construction Safety Act" and the "Occupational Safety and Health Act of 1970", the General conditions, as well as all other applicable Federal, State, and local requirement. Each Contractor shall be responsible for the payment of all fines levied against the Owner, Architect/Engineer, or Construction Manager for deficiencies relating to the safety of the Contractor's work.

1.14 STATUTORY REQUIREMENTS

All applicable Federal and State laws, and the rules and regulations of all authorities having jurisdiction over construction of the project, shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though written therein in full. This includes all current regulations with respect to paying the prevailing wage, which shall be incorporated into this project. To access prevailing wage rates go to www.state.il.us/agency/idol/rates/rates.htm. Not less than the Prevailing Wages as found by the Department of Labor or determined by the court on review shall be paid to laborers, workmen, and mechanics performing work under this contract.

By submitting a bid, bidders and all subcontractors they employ, certify that each of them shall provide and maintain a drug free work place and drug free work place program as described in Section 3 of the Drug Free Workplace Act, 30 ILCS 580/1.

Public Act 094-0515 requires the successful Contractor submit a certified payroll to the Owner on a monthly basis for the contracts they have been awarded. All Contractors shall submit monthly certified payroll reports to the Owner. No payment requests will be processed without certified payroll reports.

All Contractors are required to submit in triplicate the following on a monthly basis as scheduled and outlined in Specification Section 012900 – Payment Procedures: AIA G702 cover page & AIA G703 continuation sheets, partial lien waivers for the full amount of the total current completed amount, trailing lien waivers for all suppliers and subcontractors, and certified payroll reports for the current billing period.

1.15 ADDITIONAL INFORMATION

Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.

The successful bidder shall be required to complete all required progress documentation including Regional Office of Education (ROE) Called Inspection Reports as included in the Exhibits of the specifications.

The bidder shall, in the event of any discrepancies, omissions, or errors in the Contract Documents, or in the event of doubt on the part of a bidder as to their intent or meaning, direct inquiries in writing to: Attention: Sue Dralle, Cordogan, Clark & Associates, Inc., sdralle@cordoganclark.com. All questions relating to specific scope responsibility or other construction related activity shall be addressed to the same. No inquiries shall be reviewed or accepted 72 hours prior to bid opening. No extras shall be accepted on this project unless initiated by the Owner. Discrepancies, exclusions, clarification regarding each subcontractor's scope of work shall be addressed by subcontractor, in writing, to the Construction Manager during the bidding process.

END OF SECTION 003000

SECTION 003500 – REQUIREMENTS FOR QUALIFICATION

1.1 PURPOSE, LAWS, AND REGULATIONS

- A. The purpose of the Qualification Procedure described in this Document is to provide Owner with a mechanism to evaluate and determine whether Bidders are qualified to participate in the construction of the Project.
- B. Applicable provisions of all state and local entities having authority shall be observed in the soliciting, receiving, and evaluating of Bidders' qualifications. Applicable provisions shall be observed in bidding, letting, and execution of the Work.
- C. Prospective Bidders are required to comply with these Requirements for Qualification. Only those Bidders who have complied with the Requirements for Qualification and have been determined to be qualified will be eligible for acceptance of construction bids on the Project.

1.2 DEFINITIONS

- A. Financial Statement: The requirement for submitting a financial statement as an attachment to AIA Document A305, "Contractor's Qualification Statement" shall be understood to mean a certified annual audit, prepared according to generally acceptable accounting practices and signed by an independent certified public accountant. A Reviewed Statement of Assets and Liabilities, prepared and signed by an independent certified public accountant, is also acceptable. A self-prepared annual compiled financial statement or balance sheet is unacceptable.
- B. Bidder: A Bidder is a person or entity who submits a Submittal of Qualifications to Owner included with their bid documents.
- C. Project: Generally described in the Invitation to Bidders and/or the Advertisement for Bids.

1.3 QUALIFICATION DOCUMENTS

- A. Qualification Documents: Consist of the following:
 - 1. Section 1.9 "Relevant Experience Verification Form" contained within this Requirements for Qualifications specification section;
 - 2. Cordogan Clark & Associates Contractor Pre-Qualification Form; (See Exhibit's Section.)
 - 3. AIA Document A305, "Contractor's Qualification Statement";
 - 4. Additional documents issued by the Owner.

- B. Obtaining Qualification Documents: Complete sets of the Qualification Documents are contained herein. Prospective Bidders shall use complete sets of Qualification Documents in preparing their bid documents. Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Qualification Documents. Incomplete bid documents may be rejected by the Owner.
- C. Interpretation or Correction of Qualification Documents: If the Bidder is in doubt as to the interpretation of any part of the Qualification Documents, or finds discrepancies in or omissions from any part of the Qualification Documents, it must submit a written Request for Interpretation thereof no later than five (5) working days prior to acceptance of bid documents. Address all communications to the Architect / Construction Manager as outlined in Specification Section 003000, Instruction to Bidders.

1.4 QUALIFICATION PROCEDURES

- A. Form of Qualification Submittal shall include the following, properly executed and with all items filled out in ink or typed, and all additional data, attachments, and forms provided. Do not change or add words to the Qualification Statement or forms. All signatures must be original (and sealed if a corporation) and must be notarized and sealed by a Notary Public.:
 - 1. Section 1.9 "Relevant Experience Verification Form" contained within this Requirements for Qualifications specification section;
 - 2. Cordogan Clark & Associates Contractor Pre-Qualification Form; (See Exhibit's Section.)
 - 3. AIA Document A305, "Contractor's Qualification Statement";
- B. Modification to Requirements for Qualification:
 - 1. Clarifications, alterations, or changes made by Architect, Construction Manager, or Owner to the Requirements for Qualification shall be in writing only. Verbal information is not valid or binding.
 - 2. Modifications will be emailed to those Prospective Bidders having obtained Bid Documents from the issuing office.
- C. Submission of Qualification Documents:
 - 1. Each Submittal of Qualifications shall be included with the Bid proposal as outlined in Specification Section 003000, Instructions to Bidders.
 - 2. It is the sole responsibility of the Prospective Bidder to ensure that its submittal is received by the submittal date and time. No submittal submitted after the time fixed for receiving submittals will be considered; late submittals will be returned to the Prospective Bidder unopened.
 - 3. Owner reserves the right to waive any informality and to request additional information from Prospective Bidders, at Owner's discretion.
- D. Attachments:
 - 1. Prospective Bidders shall complete all required forms and attachments described in the Qualification Documents, entering "Not Applicable" where information does not apply.

Absence of any of the forms included in the Prequalification Documents will be reason for possible disqualification.

E. Status of Prospective Bidders:

1. Proprietors submitting bids shall indicate their status as proprietors.
2. Prospective Bidders submitting qualifications for partnerships shall indicate their status as partners and shall submit a certified copy of the power of attorney authorizing the executor of the submittal to bind the partnership.
3. Prospective Bidders submitting qualifications for corporations shall indicate their status as corporations and shall submit a certified copy of the board of directors' authorization for the Prospective Bidder to bind the corporation and shall affix the corporate seal on the submittal.
4. Prospective Bidders shall provide the following:
 - a. Names and addresses of proprietors, of all members of a partnership, or of the corporation's officers.
 - b. Name of jurisdiction where the partnership is registered or where the corporation is incorporated. Corporations must be licensed to do business in Project state at the time of executing the Contract.

1.5 QUALIFICATION CRITERIA

A. Prospective Bidders must demonstrate the following to the satisfaction of Owner:

1. Proper license under the laws and regulations governing their respective trade(s).
2. Capacity to provide Performance Bond, Labor and Material Payment Bond, and Insurance in a form acceptable to Owner in amounts adequate to bond the Work based on the scope indicated in the Bid Documents.
3. Applicable experience of firm as described in the Contractor's Qualification Statement, including the following:
 - a. Experience of Firm: The firm in its current organization shall have successfully completed minimum of five projects of similar type, quality, and scope, including a minimum of two within the three years. The firm shall have a record of project completion, credit record, record of judgment claims, arbitration proceedings, and suits pending or outstanding acceptable to Owner.
 - b. Experience of Firm Officers: The firm officers shall have personal record of project completion acceptable to Owner.
 - c. Experience of Project and Field Management Staff to Be Committed by the Prospective Bidder to Carry Out the Work: The assigned project manager and field superintendent must have successfully completed minimum of three projects of similar type, quality, and scope.
 - d. For purposes of this submittal, reference to "key individuals" as described in the Contractor's Qualification Statement shall be understood to mean the principal in charge, the project manager(s), and the project field superintendent(s) committed by the Prospective Bidder to carry out the Work of this Project. Prospective Bidder by submitting qualifications of key individuals agrees that Owner reserves the right to approve or reject subsequent reassignment of key individuals.

- e. For purposes of this submittal, "successful completion" shall be understood to mean completion of project within project schedule and budget. Provide additional information indicating reasons why any referenced project did not meet project schedule or project budget.
 - f. For purposes of this Qualification, "similar project" shall be understood to include the following project elements:
 - 1) Reinforced masonry load-bearing construction.
 - 2) Long-span, steel-framed roof structure.
 - 3) Automated building systems (controls, fire detection and alarm, technology wiring infrastructure, intercommunications).
 - 4) Renovation/addition work on occupied sites (if similar to the scope and size of the proposed project.)
4. Adequate financial resources, including ability to secure materials and labor necessary for completion of the Work and other work in hand, within the anticipated contract times, and reflecting the anticipated retainage from progress payments.
 5. Work-in-hand capacity, such that the Prospective Bidder demonstrates adequate work under contract to continue its business operations at least at their current level, at the same time indicating the capability to carry out Owner's proposed work.
 6. Adequate organization to complete work of the scope anticipated, including firm management, project management, field superintendence, and field engineering and quality control.
 7. Acceptable past performance as indicated by firm's references, including ability to meet contract time and to monitor, manage, and communicate interim scheduling requirements, to carry out required quality-control activities, to properly prepare interim and final payment requests, and to successfully complete project closeout requirements.
 8. Acceptable documentation of firm's employee screening practices as indicating by affidavit describing background check procedures for firm's employees and requirements for same incorporated in firm's subcontracts.
 9. The character, integrity, reputations, judgment, experience and efficiency of the bidder and the quality of performance of previous contracts or services performed as evidenced by the feedback obtained by references contacted. References may include contacts provided by the Bidder or obtained by other means who can attest to the aforementioned evaluation criteria.
- B. Consideration of qualifications may be withheld if the Qualification Statement shows any unexplained erasures, omissions, alterations of form, additions not called for, added restrictions or qualifying conditions, or other irregularities of any kind.
 - C. Owner may make such investigations as it deems necessary to determine the ability of the Prospective Bidder to perform the Work, and the Prospective Bidder shall furnish to Owner all such information for this purpose as Owner may request. Owner reserves the right to withhold qualification if the evidence submitted by or investigation of such Prospective Bidder fails to satisfy Owner that such Prospective Bidder is properly qualified to carry out the obligations of the proposed Project. The determination of which bidders are prequalified is not protestable, except as allowed by law.
 - D. Qualification Submittal and data contained therein is considered privileged and confidential and will not be disclosed to any outside party except as required by law.

1.6 BONDS AND INSURANCE

- A. The Prospective Bidder shall provide as part of the Submittal of Qualifications evidence of its ability to furnish below:
 - 1. Performance Bond, a Payment Bond, and a Labor and Material Bond, each in the amount of 100 percent of the Contract Sum, with a corporate surety authorized to transact business in Project's jurisdiction.
 - 2. Satisfactory certificates of insurance in the amount and types required by statute, but not less than the following:
 - a. Professional design errors and omissions insurance endorsement for delegated design by Contractor's professional engineer.
 - b. Workers' Compensation insurance provisions: statutory limits.
 - c. Commercial General Liability insurance provisions: at limits established by Owner in Project Contract Documents.

1.7 ACCEPTANCE OF QUALIFICATIONS

- A. Prospective bidders will be notified of Owner's determination, within the bid evaluation period.
- B. Evaluations will be confidential. Notifications will be publicly available information.
- C. Owner may deny qualification if it finds one or more of the following:
 - 1. The Prospective Bidder does not have sufficient financial capacity to perform the Work.
 - 2. The Prospective Bidder does not have the appropriate experience or reputation to perform the Work, including, but not limited to, having met the experience or reputation criteria set forth herein.
 - 3. The Prospective Bidder or any officer, director, or owner thereof has had judgments entered against him within the past five years for the breach of contracts for governmental or nongovernmental construction work including, but not limited to, design-build or construction management contracts.
 - 4. The Prospective Bidder has been in substantial noncompliance with the terms and conditions of prior construction with Owner, or in documented substantial noncompliance with the terms and conditions of prior construction with another public body without good cause.
 - 5. The Prospective Bidder or any officer, director, owner, or chief financial official thereof has been convicted within the past 10 years of a crime related to governmental or nongovernmental construction or contracting.
 - 6. The Prospective Bidder or any officer, director, or owner thereof is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state, or agency of the Federal Government.
 - 7. The Prospective Bidder failed to provide to the public body in a timely manner any information required by the public body relevant to the six preceding subparagraphs.
 - 8. The Prospective Bidder provides false, nonresponsive, misleading, or incomplete information for items required herein.
- D. The acceptance of a Prospective Bidder's qualifications will be an award of contract should the Prospective Bidder provide the lowest qualified responsive and responsible Bid, signed by a

duly authorized representative of Owner; no other act by Owner or its agents shall constitute the acceptance of qualifications. The acceptance of a Prospective Bidder's qualifications by Owner does not constitute a contract or promise to award a contract to the Prospective Bidder.

1.8 PROSPECTIVE BIDDER'S CHECKLIST

- A. In an effort to assist the Prospective Bidder in properly completing all documentation required, the following checklist is provided for the Prospective Bidder's convenience. The Prospective Bidder is solely responsible for verifying compliance with prequalification requirements.
1. Reviewed the Qualification Documents, including the Requirements for Qualification, prior to preparing this submittal.
 2. Section 1.9 "Relevant Experience Verification Form" contained within this Requirements for Qualifications specification section.
 3. Cordogan Clark & Associates Contractor Pre-Qualification Form. (See Exhibit's Section.)
 4. Prepared AIA Document A305, "Contractor's Qualification Statement," as required by the document instructions and by the Requirements for Prequalification, including all attachments and data required as part of the Qualification Statement, properly notarized.
 5. Attached: Copy of applicable Contractor's license(s).
 6. Attached: Resumes of key individuals.
 7. Attached: Other attachments as necessary to provide information required.
 8. By submitting notarized statement, the Prospective Bidder certifies that the Bidder can provide executed Performance Bond and Labor and Material Bond meeting requirements given in the Bid Documents.
 9. By submitting notarized statement, the Prospective Bidder certifies that the Bidder can provide Certificates of Insurance in the amounts indicated in Specification Section 005000, "Supplementary General Conditions".

1.9 RELEVANT EXPERIENCE VERIFICATION FORM

- A. Attach additional sheets as required to complete this form in its entirety. Additionally, Bidder is also required to furnish with their bid the completed Cordogan Clark & Associates Contractor Pre-Qualification Form and AIA Document A-305, "Contractor's Qualification Statement."

1. List of all similar projects (and contract value) contracted with the Bidder that have been completed within the last 5 years.

2. List of all similar projects completed for academic (K-12 and Higher Education) institutions over the last 5 years that were contracted with the Bidder.

3. List of five academic (K-12 and Higher Education) references where similar work was contracted with and installed by the Bidder. Include organization name, contact name, phone, email, and any pertinent project details if not included w/ the above project experience lists.

4. What work (be specific – field installation labor, administrative, etc. and % of total contract) is self performed and what is subcontracted under their contract as defined by the scope of work?

5. List staffing (quantities, title, roles) assigned to complete this project in the timeline outlined in Section 003000.

6. List of Key Personnel to be involved in this project (include title/responsibilities)

7. List of Current Workload and Status (projected through the end of current year)

Signature: _____

Printed Name & Position: _____

Date: _____ Firm Name: _____

Official Address: _____

Phone _____ Email _____

END OF DOCUMENT 003500

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

SECTION 004000 – FORM OF PROPOSAL

A. GENERAL

FORM OF PROPOSAL FOR FIRE PANEL REPLACEMENTS AT ROLLINS ELEMENTARY SCHOOL.

SUBMITTED BY: _____ DATE: _____

TO: Ashraf Kawash, Director of Buildings & Grounds, EASD #131

The undersigned having carefully examined the Contract Documents consisting of the following: Specifications (Inclusive of all Sections and Exhibits); Drawings; and Addenda, if any. As prepared by Cordogan, Clark & Associates, which Contract Documents form a component part of this Proposal, and having examined the premises and conditions affecting the work, proposes to furnish all labor and materials required for the Contractor as follows:

B. ADDENDA

I acknowledge receipt of the following Addenda:

No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____
No. _____	Date _____	No. _____	Date _____

C. BASE BID

In accordance with Drawings and Specifications for general contract including all divisions of work as indicated in Work Included in the Specifications for General Construction and as shown in the drawings. Proposal award(s) may be issued to a single bidder for all or select buildings or may be issued to multiple bidders depending upon the lowest aggregate responsive and responsible bid(s) from qualified bidders.

BASE BID #1 – Rollins Elementary School	SUBTOTAL \$ _____
+ CONTINGENCY ALLOWANCE	\$ _____ 25,000.00
= TOTAL BASE BID	\$ _____

Write Out _____

D. SCHEDULE OF ALTERNATES

The selected alternates will be used to determine the lowest qualified Bid for this Bid Package. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment and all alternates shall be inclusive of contractor overhead and profit regardless of whether additive or deductive. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within 90 days of the Notice of Award unless otherwise indicated in the Contract Documents.

Bidder is required to note if alternate is additive, deductive, or no change from base bid amount. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE." If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE." The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum. Acceptance or non-acceptance of any alternates by the Owner shall have no affect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

**Voluntary
Alternate**

\$ _____
Add/Deduct/No Change

E. UNIT PRICES

All unit cost are to include equipment material and labor costs, including bonding, overhead and profit. Bidder must quote on all items called for in their bid package. This form is required to be attached to the Bid Form. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

Bidder is also required to email the Schedule of Values and Unit Pricing in Microsoft Excel (.XLS) electronic format one to 24 hours after bid due date but no earlier or later to sdralle@cordoganclark.com. Bidders may attach a printed copy of the Unit Prices in lieu of handwriting each entry.

SCHEDULE OF UNIT PRICES

All unit cost are to include equipment material and labor costs, including bonding, overhead and profit. Bidder must quote on all items called for in their bid package.

Unit Price #01	Install (1) heat detector at 10ft ceiling	\$ _____ per EA
Unit Price #02	Install (1) smoke detector at 10ft ceiling	\$ _____ per EA
Unit Price #03	Install 1000ft of 2-conductor, 16 AWG, twisted bare copper, Non-Shielded, FPLP	\$ _____ per M
Unit Price #04	Install (1) strobe fire alarm notification device	\$ _____ per EA

Unit Price #05	Install (1) speaker-strobe fire alarm notification device	\$_____per EA
Unit Price #06	Install (1) speaker fire alarm notification device	\$_____per EA
Unit Price #07	Install 1000ft of 2-conductor, 14 AWG, twisted bare copper, Non-Shielded, FPLP	\$_____per M
Unit Price #08	Install 1000ft of 2-conductor, 14 AWG, twisted bare copper, Non-Shielded, FPLR	\$_____per M
Unit Price #09	Install 1000ft of 2-conductor, 16 AWG, twisted bare copper, Non-Shielded, FPLR	\$_____per M

F. BID SECURITY

Accompanying the proposal is a Bid Bond or (Certified Check) as surety in the amount of not less than 10% of the Base Bid payable to the Owner, which it is agreed will be forfeited if the undersigned fails to execute the Contract in conformity with Specifications and Furnish Performance and Labor and Material Payment Bonds as specified within ten (10) days after notification of the award of the Contract to the undersigned

G. PERFORMANCE / PAYMENT BOND

The undersigned agrees to provide an acceptable Performance and Labor and Material Payment Bonds, in accordance with AIA Document A312, in the amount of 100% of the Base Bid of which the cost of the Bonds are included in the Bid.

H. ATTACHMENT

The undersigned acknowledges that he has read and understands the CERTIFICATE OF ELIGIBILITY TO BID attached to this Bid Form and signed and attested thereto. The undersigned further acknowledges that said CERTIFICATE OF ELIGIBILITY is a part of the Contract Documents and will be attached to the Agreement.

I. REJECTION AND WITHDRAWAL OF BID

The Owner reserves the right to accept or reject any or all of the above proposals.

J. TIME OF COMPLETION

The undersigned agrees, if awarded the Contract, to begin work immediately upon notification by the Architect. The undersigned agrees, if awarded the Contract, to complete the work within the time frame specified in Specification Section 003000.

K. SIGNATURES FORM

IF AN INDIVIDUAL:

Longhand Signature of Bidder: _____

Doing Business as: _____

Business Address: _____

City: _____ State: _____ Zip: _____

IF A CO-PARTNERSHIP:

Name of Firm: _____

By: _____

Business Address: _____

City: _____ State: _____ Zip: _____

Names and Addresses of All Members of the Firm:

IF A CORPORATION:

Corporate Name: _____

A Corporation in State of: _____

By (President): _____

Name of Officers:

President: _____

Secretary: _____

Treasurer: _____

Corporate Seal:

ATTEST: _____

L. CERTIFICATE OF ELIGIBILITY TO BID

The Bidder/Contractor certifies that the Contractor is not barred from bidding on the contract as a result of a conviction for either bid-rigging or bid rotating under Article 33E of the Criminal Code of 1961. The Bidder/Contractor acknowledges that this certificate is a part of the Contract Documents and will be attached to the Owner/Contractor Agreement.

Date: _____ Firm Name: _____

Official Address: _____

_____ By: _____

_____ Position: _____

Where Bidder is a Corporation, add:

Attest: _____
(Secretary) (Seal)

Subscribed and Sworn to Before Me this _____ day of _____, 20__

My Commission Expires: _____
Notary Public

_____, 20__ _____
Address

DRUG FREE WORKPLACE

The bidder or contractor, having 25 employees or more, does hereby certify pursuant to Section 3 of the Illinois Drug-Free Workplace Act (III. Rev. Stat. Ch. 127 132.313) that [he, she, it] shall provide a drug-free workplace for all employees engaged in the performance of work under the contract by complying with the requirements of the Illinois Drug-Free Workplace Act, further certified that [he, she, it] is not ineligible for award of this contract by reason of debarment for a violation of the Illinois Drug-Free Workplace Act.

Firm Name: _____

By: _____
(Authorized Agent of Contractor)

Title: _____

Subscribed and sworn to before me _____

This day of _____

CERTIFICATE OF COMPLIANCE WITH ILLINOIS HUMAN RIGHTS ACT

_____ (Contractor), does hereby certify pursuant to P.A. 87-1257, the Illinois Human Rights Act, that (he, she, it) has adopted a written sexual harassment policy that includes at the minimum the following information: (I) the illegality of sexual harassment; (II) the definition of sexual harassment under Illinois law, (III) a description of sexual harassment, utilizing examples; (IV) internal complaint process including penalty; (V) the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Illinois Human Rights Commission; (VI) directions on how to contact the Department and Commission; and (VII) protection against retaliation as provided by Section 6-101 of the Illinois Human Rights Act.

By: _____

Its: _____

Date: _____

Notary Public

CERTIFICATION REGARDING CRIMINAL BACKGROUND INVESTIGATIONS

Contractor hereby represents, warrants, and certifies that no officer or director thereof has any knowledge that any employee thereof has been convicted of committing or attempting to commit "Criminal Code of 1961," 720 ILCS, Sections 5/11-6 (Indecent Solicitation of a Child), 5/11-9 (Public Indecency), 5/11-14 (Prostitution), 5/11-15 (Soliciting for a Prostitute), 5/11-15.1 (Soliciting for a Juvenile Prostitute), 5/11-9 (Pimping), 5/11-19.1 (Juvenile Pimping), 5/11-19.2 (Exploitation of a Child), 5/11-20 (Obscenity), 5/11-20.1 (Sexual Assault), 5/12-14 (Aggravated Criminal Sexual Abuse), and/or those offenses defined in the "Cannabis Control Act," 720 ILCS 570/100 et. seq. And/or any offense committed or attempted in any state or against the laws of the United States, which if committed or attempted in this State, would have been punishable as on or more of the foregoing offenses.

Contractor further agrees that it shall not employ any person who have or may have direct, daily contact with the pupils of any school in the district, and for whom a criminal background investigation has not been conducted pursuant hereto, and further represents and agrees that all applicants for any such employment shall furnish with their applications the attached written "Authorization for Criminal Background Information" form authorizing the Board of Education to request a criminal background investigation of said applicant pursuant to Section 5/10-21.9 of the School Code of Illinois and to receive criminal history record information pursuant thereto to determine if the applicant has been convicted of committing or attempting to commit any of the criminal or drug offenses enumerated above. Contractor further agrees to submit with said authorization payment for any costs and expenses associated with the criminal background investigation.

Contractor further represents, warrants, and certifies that no applicant for employment with respect to whom the criminal investigation reveals any conviction for committing and/or attempting to commit any of the above enumerated offenses, shall be employed thereby in any position that involves or may involve contact with the students of the school district.

This certification is executed on the date hereinafter indicated by the designated contractor by its duly authorized officer.

By: _____

Its: _____

Date: _____

END OF SECTION 004000

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing the following:
 - 1. Unit-cost allowances.
 - 2. Contingency allowances.
 - 3. Testing and inspecting allowances
- B. See Division 1 Section "Unit Prices" for procedures for using unit prices. any

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 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. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Construction Manager IN WRITING.
- B. Contingency allowance will include Contractor's related costs and overhead and profit margins AS DEFINED IN THE SUPPLEMENTARY GENERAL CONDITIONS.
- C. At Project closeout, A CHANGE ORDER WILL BE ISSUED crediting unused amounts remaining in the contingency allowance to Owner for incorporation IN FINAL SWORN STATEMENT.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. See Section 004000 Form of Proposal for allowances assigned to each bid package.

END OF SECTION 012100

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for unit prices.
- B. See Division 1 Section "Allowances" for procedures for using unit prices to adjust quantity allowances.

1.2 DEFINITIONS

- A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of unit prices is included in Form of Proposal Section 004000. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

- A. See Bid Form 004000 for unit prices.

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

- A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements 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.
 - 1. 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.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. 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.
- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Alternate pricing shall remain open for a period of not less than 90 Days.
- E. Schedule: Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Refer to 004000 – Form of Proposal for Schedule of Alternates

END OF SECTION 012300

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.

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 AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect 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 Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - 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 costs of labor and supervision directly attributable to the change.
 - d. 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.

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.
4. Include costs of labor and supervision directly attributable to the change.
5. 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.
6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.

1.4 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 AIA Document G701.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. 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 012600

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 Application for Payment forms with Continuation Sheets.
 2. Submit the Schedule of Values to Architect at earliest possible date but no later than ten days before the date scheduled for submittal of initial Applications for Payment.
 3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of 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. Submit draft of AIA Document G703 Continuation Sheets.
 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.

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: Reviewed Applications for Payment shall be submitted to Architect no later than 5 business days before the end of the current period. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C. Payment Application Forms: Use AIA Document G702 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 three (3) signed and notarized original copies of each Application for Payment and waivers of lien and similar attachments to Architect by a method ensuring receipt within 24 hours. One copy shall include Certified Payroll report(s) for the pay period.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

- F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Current Waiver: Submit a waiver for the full amount of the current Application for Payment.
 2. Trailing Waivers: Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 3. When an application shows completion of an item, submit final or full waivers.
 4. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 5. 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. Schedule of unit prices.
 5. Submittals Schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
- 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."
 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707, "Consent of Surety to Final Payment."

7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Project meetings.
 - 3. Requests for Interpretation (RFIs).
- B. See Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in different 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.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. 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.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- 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. Startup and adjustment of systems.
 9. Project closeout activities.

1.4 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. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 2. Sheet Size: At least 8-1/2 by 11 inches. but no larger than 24 by 36 inches.
 3. Number of Copies: Submit electronically in PDF format.
 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

1.5 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 three (3) days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than fifteen (15) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; 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. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. LEED requirements.
 - l. Preparation of Record Documents.
 - m. Use of the premises and existing building
 - n. Work restrictions.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
 - x. Working hours.
 3. Minutes: Record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation 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. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 5. 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: In addition to representatives of Owner and Architect, 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 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.
 - a. 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.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: Record the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction 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.

1.6 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 3. Contractor must include suggested no-cost solution(s) with the initial RFI submittal to the Architect. RFIs submitted without no-cost solution(s) will be returned with no response.

- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested no-cost solution(s). Contractor shall provide proposed solution(s) to address the issue that has no impact on the Contract Time or the Contract Sum.
 10. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 11. Contractor's signature.
 12. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Form: Use the RFI Form included within the Exhibits. Submit RFI's electronically in PDF format via Basecamp (www.basecamp.com).
1. Identify each page of attachments with the RFI number and sequential page number.
- D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow five (5) working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. RFIs submitted without no-cost solution(s).
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or RFIs with numerous errors.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.

- E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within five (5) days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at regular intervals to be determined at pre-construction meeting. Use CSI Log Form 13.2B.
 - 1. Project name.
 - 2. Name and address of Contractor.
 - 3. Name and address of Architect.
 - 4. RFI number including RFIs that were dropped and not submitted.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
 - 7. Date Architect's response was received.
 - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 - 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Submittals Schedule.
 - 3. Daily construction reports.
 - 4. Field condition reports.
- B. See Division 01 Section "Payment Procedures" for submitting the Schedule of Values.

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 on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
- E. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.

- F. Major Area: A story of construction, a separate building, or a similar significant construction element.

1.3 SUBMITTALS

- A. Submittals Schedule: Submit three (3) copies of schedule for approval. 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. Contractor's Construction Schedule: Submit electronically in PDF format initial schedule, large enough to show entire schedule for entire construction period.
 - 1. Submit an electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.
- C. Daily Construction Reports: Submit electronically in PDF format at weekly intervals.
- D. Field Condition Reports: Submit electronically in PDF format at time of discovery of differing conditions.

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 in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.

1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.
3. Enter the approved submittals schedule dates into Basecamp (www.basecamp.com).

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Substantial 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.
- B. 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 twenty (20) days, unless specifically allowed by Architect.
 2. Procurement Activities: Include procurement process activities for the following 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 five (5) days for startup and testing.
 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.
- C. 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. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.

- 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion
- E. 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.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within twenty (20) days of date established for commencement of the Work. 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.
 - 1. For construction activities that require 3 months or longer to complete, indicate an estimated completion percentage in ten (10) percent increments within time bar.

2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 1. List of subcontractors at Project site.
 - 2. Equipment at Project site.
 - 3. Material deliveries.
 - 4. High and low temperatures and general weather conditions.
 - 5. Accidents.
 - 6. Stoppages, delays, shortages, and losses.
 - 7. Meter readings and similar recordings.
 - 8. Orders and requests of authorities having jurisdiction.
 - 9. Services connected and disconnected.
 - 10. Equipment or system tests and startups.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation on CSI Form 13.2A. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

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 electronically in PDF format 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 013200

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, and other submittals.
- B. See Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule.
- C. See Division 01 Section "Quality Requirements" for submitting test and inspection reports.
- D. See Division 01 Section "Closeout Procedures" for submitting warranties.
- E. See Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- F. See Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
- G. See Division 01 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.

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 responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

- A. Submit all submittals in PDF format electronically via Basecamp (www.basecamp.com).
- 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.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- 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. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow ten (10) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow ten (10) days for review of each resubmittal.
- 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 6 by 8 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. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically 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 in 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. Transmittal Form: No transmittal form required for submittals submitted only through Basecamp. For submittals that are required via hardcopy, Use AIA Document G810.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "Approved" or "Approved As Noted" notation from Architect's action stamp.
- J. 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.
- K. Use for Construction: Use only final submittals with mark indicating "Reviewed" or "Reviewed As Noted" notation from Architect's action stamp taken by Architect.

1.4 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request and upon receipt of a completed and signed Electronic Release of Liability Form, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. Provided Cordogan, Clark & Associates, Inc. CCA exercises reasonable care in the electronic or disk transmission of data, information or documents to the above indicated receivee, the receivee shall be responsible for and solely bear all damages, losses or expenses it or Cordogan, Clark & Associates, its employees, officers and consultants incur as a result of:
 - a. Errors or defects introduced by such transmission
 - b. The Receivees' and its independent contractors' or agents' automated conversion or reformatting of the data, information or documents transmitted
 - c. Defects or errors in the Receivees' and its independent contractors' or agents' software or hardware utilized to receive, transmit, utilize, format or reproduce data, information or documents
 - 2. Provided Cordogan, Clark & Associates and its consultants have exercised reasonable care in the selection and operation of hardware and software for its computer aided

design services, Cordogan, Clark & Associates shall not be responsible or liable for errors, defects, inexactitudes or anomalies in data, information or documents (including drawings and specifications) caused by:

- a. Cordogan, Clark & Associates or its consultants' computer software or hardware defects or errors
 - b. Cordogan, Clark & Associates consultants' electronic or disk transmittal of data, information or documents
 - c. Cordogan, Clark & Associates reformatting or automated conversion of data, information or documents electronically or disk transmitted from Cordogan, Clark & Associates' consultants to Cordogan, Clark & Associates.
3. Receivee waives all claims against Cordogan, Clark & Associates, its employees, officers and consultants for damages, losses or expenses it incurs arising from such defects or errors.
4. If as otherwise permitted by this Agreement, the Receivee shall electronically or by disk transmit data, information or documents (including drawings and specifications) to persons other than Cordogan, Clark & Associates, the Receivee shall be responsible for and solely bear all damages, losses or expenses arising from:
 - a. errors or defects introduced by such transmission
 - b. errors or defects introduced by such persons retransmission, automated conversion, reformatting, or reproduction of such data, information or documents
5. Receivee shall indemnify, defend and hold Cordogan, Clark & Associates and its consultants, together with their respective employees and officers, harmless from and against any claims, suits, demands, causes of action, losses, damages or expenses (including all attorneys' fees and litigation expenses) resulting or arising from errors of defects in data, information or documents, including drawings and specifications, caused or introduced by the Receivee (or its independent contractors and agents):
 - a. Provision or transmission of data, information or documents to Cordogan, Clark & Associates
 - b. Re-transmission, automated conversion, reformatting or reproduction of Cordogan, Clark & Associates created data, information or documents
 - c. Use of defective, erroneous or incompatible software or hardware.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. Submit all submittals electronically via Basecamp (www.basecamp.com).
- B. General: Prepare and submit Action Submittals required by individual Specification Sections.
- C. 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. Manufacturer's catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Compliance with specified referenced standards.
 - i. Testing by recognized testing agency.
 4. Number of Copies: Submit electronically in PDF format via Basecamp. Mark up and retain one returned copy as a Project Record Document.
- D. 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, unless submittal of Architect's CAD Drawings is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. 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. Notation of coordination requirements.
 - j. Notation of dimensions established by field measurement.
 - k. Relationship to adjoining construction clearly indicated.
 - l. Seal and signature of professional engineer if specified.
 - m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 24 by 36 inches (750 by 1000 mm).
 3. Number of Copies: Submit electronically in PDF format.
- E. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Provide a scan and photos of the sample submitted and submit via Basecamp for tracking and record purposes.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one (1) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 - b. Submit a scan and/or photos of the samples in PDF format via Basecamp at the time of initial submittal to the Architect for tracking and record keeping purposes. Architect may stamp and return scan via Basecamp in lieu or addition to returning actual sample(s).
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Architect will retain two (2) Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
 - b. Submit a scan and/or photos of the samples in PDF format via Basecamp at the time of initial submittal to the Architect for tracking and record keeping purposes. Architect may stamp and return scan via Basecamp in lieu or addition to returning actual sample(s).
- F. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
1. Number of Copies: Submit electronically in PDF format via Basecamp.
- G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

- H. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- J. 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. Use CSI Form 1.5A.
 - 1. Number of Copies: Submit electronically in PDF format via Basecamp.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit electronically in PDF format via Basecamp.
 - 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 specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- D. 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.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. 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 in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. 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 in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. 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.
- M. 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 in the Contract Documents.
- N. 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.
- O. 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 in the Contract Documents.
- P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- Q. 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.
- R. 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.
- S. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Statement on condition of substrates and their acceptability for installation of product.
 2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
- T. 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.
- U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.
1. Architect will not review submittals that include MSDSs and will return them for resubmittal.

2.3 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three (3) copies of a statement, 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.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to 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. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. "Reviewed".
 - 2. "Reviewed – Revise As Noted"
 - 3. "Reviewed – Revise and Resubmit"
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

EAST AURORA SCHOOL DISTRICT #131
 FIRE PANEL REPLACEMENT
 AT ROLLINS ELEMENTARY SCHOOL
 950 KANE ST, AURORA, ILLINOIS 60505
 CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
 960 RIDGEWAY AVENUE
 AURORA, ILLINOIS 60506
 630-896-4678
 JANUARY 14, 2025

SECTION 013300a – SUBMITTAL SCHEDULE - Supplement to Submittal Procedures 01 33 00

	TEST REPORT/TESTING	CERTIFICATES	COORDINATION DWGS.	DELEGATED DESIGN	MFGR. INSTRUCTIONS	OPER. & MAINT. DATA	SAMPLES	SCHEDULES	SHOP DWGS.	PRODUCT DATA	EXTENDED WARRANTIES	Review Time	Review Notes
CONTRACTOR SUBMITTALS													
084213 ALUMINUM FRAMED ENTRANCES AND STOREFRONTS	x	x			x	x	x	x	x	x		10	
088000 GLAZING		x			x	x	x	x	x	x		10	
122413 ROLLER WINDOW SHADES		x			x	x	x	x	x	x		10	

END OF 013300a

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. 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.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See Divisions 02 through 49 Sections for specific test and inspection requirements.

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 used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five (5) previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

- B. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- C. 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.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Mockups: Not Required
- J. Laboratory Mockups: Not Required

1.6 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. 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, and the Contract Sum will be adjusted by Change Order.
- B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least twenty-four (24) hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."
- D. **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.
- E. **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. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.
- F. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. **Coordination:** Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. **Special Tests and Inspections:** Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

- B. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. See Division 01 Section "Execution" for progress cleaning requirements.
- C. See Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

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 shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.
- B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

1.5 QUALITY ASSURANCE

- A. 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.

1.6 PROJECT CONDITIONS

- A. 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.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Pavement: Comply with Division 32 pavement Sections.
- B. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 8 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails
- C. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 8 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.
- D. Wood Enclosure Fence: Plywood, **6 feet (1.8 m)** high, framed with four 2-by-4-inch (50-by-100-mm) rails, with preservative-treated wood posts spaced not more than 8 feet (2.4 m) apart.
- E. Lumber and Plywood: Comply with requirements in Division 06 Carpentry Sections.
- F. Gypsum Board: Minimum 1/2 inch (12.7 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- G. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC 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.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of eight (8) at each return air grille in system and remove at end of construction. Permanent HVAC System must be shut down whenever work activities causing excessive airborne particulates (i.e., dust, smoke, etc.). The trade causing or requesting the shut down shall first obtain approval from the CM and coordinate with the General Trades Prime Contractor and Mechanical Contractor to ensure proper maintenance, shut down and operation of the HVAC System.

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 by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Not required

3.3 SUPPORT FACILITIES INSTALLATION

- A. Not required

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Pest Control: Employ practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- B. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner with one set of keys.
 - 3. Provide a Knox-Box with one set of keys for access to the site by other Prime Contractors and security personnel, police and fire departments.
- C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -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.
 - 4. 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.

3.5 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.
 - 1. Maintain operation of temporary enclosures, 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.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- 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 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 specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. See Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
- C. See Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven (7) days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

- B. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.
- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Store cementitious products and materials on elevated platforms.
 - 5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.

6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
 3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within sixty (60) days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - 2. Requested substitution does not require extensive revisions to the Contract Documents.
 - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 4. Substitution request is fully documented and properly submitted.
 - 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 - 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 7. Requested substitution is compatible with other portions of the Work.
 - 8. Requested substitution has been coordinated with other portions of the Work.
 - 9. Requested substitution provides specified warranty.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.
 - 7. Correction of the Work.
- B. See Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.2 SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.

- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, 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. 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.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. 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. Submit requests on CSI Form 13.2A, "Request for Interpretation."

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.

3.4 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.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. 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 directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. 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.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 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 (27 deg C).
 - 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.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. 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.
- H. 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.
- I. 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.

3.6 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 01 Section "Quality Requirements."

3.7 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.

3.8 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 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.
- 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 017300

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 42 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.2 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least ten (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 they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place 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. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems 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.

1.3 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.

1. 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.
- B. Miscellaneous Elements: Do not cut and patch miscellaneous 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. Miscellaneous elements include the following:
 1. N/A
- C. 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.

1.4 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.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place 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 in-place 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 in-place 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 in-place 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.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption 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 in-place 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 in-place 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. 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. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 - 5. 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.
 - 6. 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.
 - 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.
 3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

SECTION 017400 - WARRANTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.
 - 1. Each Contractor as listed on the schedule of values shall provide a written one year warranty (unless otherwise required for a longer period) on there respective letterhead for material, workmanship defects. The warranty shall provide a description of the work, list company contact and phone number and be signed by an officer of the company.
- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 DEFINITIONS

- A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.
- B. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
- C. Refer to Divisions 2 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

- D. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the 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 the Installer.
 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
 3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
- E. Owner reserves the right to conduct a final walk through of the building during the tenth (10th) month of the twelve (12) month warranty period. Owner shall submit a written list of deficiencies to the contractor and contractor shall complete all warranty work prior to the expiration of the twelve (12) month warranty period.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 017400

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Disposing of nonhazardous demolition and construction waste.
- B. See Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements, and for disposition of hazardous waste

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 QUALITY ASSURANCE

- A. Waste Management Conference: Conduct conference at Project site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Not permitted on Project site.

C. Salvaged Items for Owner's Use:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.2 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419

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. Warranties.
 - 3. Final cleaning.
- B. See Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
- C. See Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- D. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- E. See Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
- F. See Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.2 SUBMITTALS

- A. Before Final Payment is approved, the Contractor shall submit electronically in PDF format via Autodesk Build (www.Autodesk.com) to the Architect including documentation as note in the following sections:
 - 1. Closeout Procedures
 - 2. Operation and Maintenance Data
 - 3. Project Record Documents

1.3 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, 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.
- 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. Reinspection: Request reinspection 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.

1.4 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. Submit demonstration and training videotapes.
- 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. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit list electronically in PDF format via Autodesk Build. 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. Use CSI Form 14.1A.
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.

1.6 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. 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 (215-by-280-mm) 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.
 4. Provide warranty documents electronically in PDF format via Autodesk Build.

- C. 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 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.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. 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.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - e. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - f. Sweep concrete floors broom clean in unoccupied spaces.
 - g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - h. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - i. Remove labels that are not permanent.

- j. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - k. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - l. Replace parts subject to unusual operating conditions.
 - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. 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.
 - o. Leave Project clean and ready for occupancy.
- C. Pest Control: Make a final inspection and rid Project of rodents, insects, and other pests.
- 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.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation manuals for systems, subsystems, and equipment.
 - 2. Maintenance manuals for the care and maintenance of products, materials, and finishes, systems and equipment.
- B. See Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.2 SUBMITTALS

- A. Manual: Submit electronically in PDF format via Basecamp (www.basecamp.com) each manual in final form at least fifteen (15) days before final inspection. Architect will return copy with comments within fifteen (15) days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit electronically in PDF format each corrected manual within fifteen (15) days of receipt of Architect's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.

4. Date of submittal.
 5. Name, address, and telephone number of Contractor.
 6. Name and address of Architect.
 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch (215-by-280-mm) paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.
 5. Submit all Operation and Maintenance data electronically in PDF format via Basecamp.

2.2 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.

5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
 - D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
 - E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.3 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
 1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.4 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures,

maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
- D. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training videotape if available, that detail essential maintenance procedures:
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a

tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- C. See Division 01 Section "Closeout Procedures" for binder submittal requirements.
- D. See Divisions 02 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit electronically in PDF format via Autodesk Build (www.autodesk.com) marked-up Record Prints. Architect will initial and date each set and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return prints for organizing into sets, printing, binding, and final submittal.
 - b. Final Submittal: Submit electronically in PDF format via Autodesk Build marked-up Record Prints, and the following:
- B. Record Specifications: Submit electronically in PDF format via Autodesk Build Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit electronically in PDF format via Autodesk Build each Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints 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 would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications 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. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 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 Specifications, and Record Drawings where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. 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.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and training videotapes.
- B. See Divisions 02 through 49 Sections Sections for specific requirements for demonstration and training for products in those Sections.

1.2 SUBMITTALS

- A. Instruction Program: Submit electronically in PDF format outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- B. Demonstration and Training Videos: Submit two (2) copies within seven (7) days of end of each training module. Submit electronically via Autodesk Build (www.autodesk.com).

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site. Review methods and procedures related to demonstration and training.

- D. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. 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.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include system and equipment descriptions, operating standards, regulatory requirements, equipment function, operating characteristics, limiting conditions, and performance curves.
 - 2. Documentation: Review emergency, operations, and maintenance manuals; Project Record Documents; identification systems; warranties and bonds; and maintenance service agreements.
 - 3. Emergencies: Include instructions on stopping; shutdown instructions; operating instructions for conditions outside normal operating limits; instructions on meaning of warnings, trouble indications, and error messages; and required sequences for electric or electronic systems.
 - 4. Operations: Include startup, break-in, control, and safety procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; operating procedures for emergencies and equipment failure; and required sequences for electric or electronic systems.
 - 5. Adjustments: Include alignments and checking, noise, vibration, economy, and efficiency adjustments.
 - 6. Troubleshooting: Include diagnostic instructions and test and inspection procedures.
 - 7. Maintenance: Include inspection procedures, types of cleaning agents, methods of cleaning, procedures for preventive and routine maintenance, and instruction on use of special tools.
 - 8. Repairs: Include diagnosis, repair, and disassembly instructions; instructions for identifying parts; and review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish an instructor to describe Owner's operational philosophy.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven (7) days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral, a written or a demonstration performance-based test.

3.2 DEMONSTRATION AND TRAINING VIDEOS

- A. General: Engage a qualified commercial photographer to record demonstration and training videos. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Format: Provide high-quality digital video on DVD.
- C. Narration: Describe scenes on video by audio narration by microphone or dubbing audio narration off-site after video is recorded. Include description of items being viewed. Describe vantage point, indicating location, direction (by compass point), and elevation or story of construction.

END OF SECTION 017900

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

EXHIBITS:

- EXHIBIT A – BIDDER QUALIFICATION FORMS, CORDOGAN CLARK & ASSOCIATES
CONTRACTOR PRE-QUALIFICATION FORM & AIA DOCUMENT NO. A-305, 1986
EDITION (AIA FORMS AVAILABLE AT: <http://www.aia.org/contractdocs/index.htm>)
- EXHIBIT B – STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR,
AIA DOCUMENT NO. A-101, 2017 EDITION
- EXHIBIT C – GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, AIA
DOCUMENT NO. A-201, 2017 EDITION
- EXHIBIT D – BID BOND, AIA DOCUMENT NO. A-310, 2010 EDITION
- EXHIBIT E – PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND, AIA
DOCUMENT NO. A-312, 2010 EDITION
- EXHIBIT F – PAYMENT APPLICATION FORMS, AIA DOCUMENT NO. G-702, 1992 EDITION
AND AIA DOCUMENT NO. G-703, 1992 EDITION CONTINUATION SHEETS
- EXHIBIT G – WORK CHANGES PROPOSAL REQUEST FORM, AIA DOCUMENT NO. G-709,
2001 EDITION
- EXHIBIT H – REQUEST FOR INFORMATION (RFI) FORM
- EXHIBIT I – ELECTRONIC RELEASE OF LIABILITY FORM
- EXHIBIT J – OWNER TAX EXEMPT CERTIFICATE
- EXHIBIT K – CONFIRMATION OF CALLED INSPECTION RECORDS AND DOCUMENTATION
OF CALLED INSPECTIONS FOR NEW CONSTRUCTION
- EXHIBIT L – MILESTONE SCHEDULE

Cordogan, Clark & Associates, Inc.

Contractor Pre-Qualification Form

GENERAL INFORMATION			
		Today's Date:	
1. Company Name:		Telephone:	Fax:
Street Address:		Mailing Address:	
Contact Person:		Web Site:	
Telephone:		E-Mail:	
2. Officers President:		Years with Company:	
Vice President:		Years with Company:	
Secretary:		Years with Company:	
3. How Many Years has Your Organization Been in Business Under Your Present Firm Name?			
4. Form of Business: <input type="checkbox"/> Sole Owner <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation (State Incorporated: _____)			
5. State License #:	5a. Tax ID#:	5b. Dun's #:	
6. Under Current Management Since (Date):			
7. SIC / NAICS Code(s):		8. Specialty Trade(s) Performed:	
9. Parent Company Name:			
City:	State:	Zip:	
10. Subsidiaries:			
SAFETY			
11. Does Your Company Have a Written Safety & Health Program?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>(If yes, please attach a copy of the Table of Contents.)</i>			
12. Who is Responsible for Coordinating Your Company's Safety Program?			
Name:		Title:	Telephone:
13. Describe Your Safety Training for Your Employees:			
- Employee Orientation Training	<input type="checkbox"/> Yes <input type="checkbox"/> No	Frequency:	By Whom:
- Supervisors, Managers	<input type="checkbox"/> Yes <input type="checkbox"/> No	Frequency:	By Whom:
- Jobsite "Tool Box Meetings"	<input type="checkbox"/> Yes <input type="checkbox"/> No	Frequency:	By Whom:
14. Does Your Company Have a Site Specific Safety Program?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
<i>(If yes, please attach an example copy.)</i>			
15. Does Your Company Perform Jobsite Inspections?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Frequency:	By Whom:
<i>(If yes, please attach an example.)</i>			
15a. If Your Company Does not Perform Jobsite Inspections, Explain Why:			
15b. Do You Use An Outside Agency For Site Inspections?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Frequency:	Whom:

SAFETY (cont'd)

16. Insurance Carrier(s): *(Please attach copy of current insurance certificate.)*

Name	Type of Coverage	Insurance Broker's Contact & Telephone

17. What is Your Company's OSHA Recordable Incident Rate Over the Last Three Years:

Year:			
Rate:			

18. What is Your Company's OSHA Severity or Lost Workday Rate Over the Last Three Years:

Year:			
Rate:			

Please attach copies of your OSHA 300 logs for years listed above. If you do not complete OSHA 300 forms, explain why:

19. What is Your Company's Experience Modification Rate (E. M. R.) Over the Last Three Years:

Year:			
Rate:			

(Please attach a letter from your insurance carrier or state fund (on their letterhead) verifying the E. M. R. data provided.)

20. How Many OSHA Citations / Violations has Your Company Received in the Last Three Years:

(Please provide the details of each citation / violation on a separate sheet of paper and attach.)

INDUSTRY MEMBERSHIP AFFILIATIONS

21. What Industry Organizations / Associations is Your Company a Member of:

21a. What Awards / Special Recognition has Your Company Received:

Signature Block

As a condition of pre-qualification, the said Company agrees that it:

- A. Will notify the Owner within five business days of any material changes to the information contained in this form.
- B. Authorizes the local broker(s) listed in Item 16 to provide any and all information regarding said Company to the Owner, as a condition of said Company's pre-qualification.

Signature – FORM MUST BE SIGNED BY SAID COMPANY'S PRESIDENT, VICE PRESIDENT or CEO (if Corporation), PARTNER (if partnership), or SOLE OWNER (if sole owner). *I hereby certify that all the information contained in this pre-qualification statement is true and complete, and that I have the authority to execute this document on behalf of this firm.*

Signed:		Date:
Name:		Title:

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 **2019**
(In words, indicate day, month and year.)

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

East Aurora School District
417 S. Fifth Street
Aurora, IL 60505
Phone: 630-299-5550
Fax: 630-299-5500

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

TBD

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

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

Cordogan Clark & Associates, Inc.
960 Ridgeway Avenue
Aurora, IL 60506
Phone: 630-896-4678
Fax: 630-896-4987

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

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: **TBD**

§ 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
	TBD

§ 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:

See Item 5.1.3.

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the 10th working day before the end of the month, the Owner shall make payment of the amount certified to the Contractor not later than the last day of the following 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 Sixty (60) 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. In addition to other required items, each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with the applicable statutes of the State of Illinois: (i) a current sworn statement of the Contractor setting forth all Subcontractors and any material suppliers, the amount requested for any Subcontractor or material supplier, together with a current, duly executed waiver of liens from the Contractor, Subcontractor, or materials supplier and (ii) any other document reasonably requested by the Architect including, but not limited to, any "after the fact" waivers of mechanics' and material suppliers' liens from all Subcontractors and material suppliers where applicable.

§ 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.)

10% Retainage

§ 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.)

Reductions of retainage prior to the date specified in the Contract Documents shall be at the discretion of the Owner. Any reduction or release of retainage, or portion thereof, shall not be a waiver of (i) any of the Owner's rights to retainage in connection with other payments to the Contractor or (ii) any other right or remedy that the Owner has under the Contract Documents, at law or in equity.

§ 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)*

With the parties having the option to mediate prior to litigation if agreed to by both parties in writing.

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.)

§ 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)

Steve Megazzini, Assistant Superintendent of Operations
East Aurora School District #131
411 Hill Avenue
Aurora, Illinois 60505
Telephone Number: 630-299-5548

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

TBD

§ 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 Insurance and Bonds – see Item 9.1.9.
- .3 AIA Document A201™–2017 & 2007, General Conditions of the Contract for Construction

(Insert the date of the E203-2013 incorporated into this Agreement.)

- .5 Drawings

Number	Title	Date
See Exhibit "A" – List of Drawings & Specifications		
.6 Specifications		

Section	Title	Date	Pages
See Exhibit "A" – List of Drawings & Specifications			

.7 Addenda, if any:

Number	Date	Pages
TBD		

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.)

☒ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Specification Section 005000	Supplementary General Conditions		

.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.)

Insurance requirements are as listed in the project Specifications. Payment & Performance Bond's are the full amount of the awarded contract.

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

OWNER (Signature)

Dr. Jennifer Norrell, Superintendent
(Printed name and title)

CONTRACTOR (Signature)

TBD
(Printed name and title)

Additions and Deletions Report for AIA® Document A101™ – 2017

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

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 17:14:44 ET on 03/19/2019.

PAGE 1

AGREEMENT made as of the [] day of [] in the year 2019

...

East Aurora School District
417 S. Fifth Street
Aurora, IL 60505
Phone: 630-299-5550
Fax: 630-299-5500

...

TBD

...

Cordogan Clark & Associates, Inc.
960 Ridgeway Avenue
Aurora, IL 60506
Phone: 630-896-4678
Fax: 630-896-4987

PAGE 3

[☒] By the following date: TBD

...

TBD

...

PAGE 4

See Item 5.1.3.

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a 10th working day before the end of the month, the Owner shall make payment of the amount certified to the Contractor not later than the last day of the following 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 (Sixty (60) days after the Architect receives the Application 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. In addition to other required items, each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with the applicable statutes of the State of Illinois: (i) a current sworn statement of the Contractor setting forth all Subcontractors and any material suppliers, the amount requested for any Subcontractor or material supplier, together with a current, duly executed waiver of liens from the Contractor, Subcontractor, or materials supplier and (ii) any other document reasonably requested by the Architect including, but not limited to, any "after the fact" waivers of mechanics' and material suppliers' liens from all Subcontractors and material suppliers where applicable.

PAGE 5

10% Retainage

...

Reductions of retainage prior to the date specified in the Contract Documents shall be at the discretion of the Owner. Any reduction or release of retainage, or portion thereof, shall not be a waiver of (i) any of the Owner's rights to retainage in connection with other payments to the Contractor or (ii) any other right or remedy that the Owner has under the Contract Documents, at law or in equity.

PAGE 6

☒ Litigation in a court of competent jurisdiction

☒ Other (*Specify*)

With the parties having the option to mediate prior to litigation if agreed to by both parties in writing.

...

Alberto Tijerina, Director of Buildings & Grounds
East Aurora School District #131
411 Hill Avenue
Aurora, Illinois 60505
Telephone Number: 630-299-8340

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TBD

...

- 2** AIA Document A101™-2017, Exhibit A, Insurance and Bonds – see Item 9.1.9.
- 3** AIA Document A201™-2017, A201™-2017 & 2007, General Conditions of the Contract for Construction
- 4** AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

...

See Exhibit "A" – List of Drawings
& Specifications

PAGE 8

See Exhibit "A" – List of Drawings
& Specifications

...

TBD

...

☐ 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:

...

Specification Section 005000

Supplementary General Conditions

...

Insurance requirements are as listed in the project Specifications. Payment & Performance Bond's are the full amount of the awarded contract.

...

Dr. Jennifer Norrell, Superintendent

TBD

DRAFT AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

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

East Aurora School District #131
General Conditions for Construction Projects
(Revised March 19, 2019)

THE OWNER:

East Aurora School District #131
417 S. Fifth Street
Aurora, IL 60505

THE ARCHITECT:

(Name, legal status and address)

The Architect means the architect and/or engineer identified elsewhere in the Contract Documents.

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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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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 all of the Contractor's duties under the Contract Documents, including 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, if any, 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 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.

§ 1.2.4 If any two or more provisions of the Contract Documents conflict, and such conflict relates to the quantity or quality of the Work, the Contractor agrees to provide the greater quantity and/or better quality of such Work.

§ 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 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 reserved rights claimed by the owner(s) and any licensee(s) who have an interest in and to the Instruments of Service.

§ 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(s) and any licensee(s) who have an interest in and to the Instruments of Service.

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

§ 1.8 Reserved.

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, to the extent allowed by law and by the Owner's policies and procedures, 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 Reserved.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Reserved.

§ 2.2.2 Reserved.

§ 2.2.3 Reserved.

§ 2.2.4 Where the Owner has furnished any information or documents to the Contractor in connection with the Project, 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. The Contractor shall provide information or other assistance as the Architect or Owner may request in connection with these obligations.

§ 2.3.2 As appropriate for the Project, the Owner shall retain an architect and/or engineer lawfully licensed to practice architecture and/or engineering, or an entity lawfully practicing architecture and/or engineering, 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 Reserved.

§ 2.3.4 Upon written request by the Contractor, 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. The Owner's rights and remedies under this section are in addition to, and not a limitation of, any other rights and remedies of the Owner under the Contract Documents or otherwise.

§ 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 or approved construction schedules, and fails within a five-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default, neglect, or failure. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and reasonable attorneys' fees, 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 within thirty (30) days after a request by the Owner.

§ 2.6 Owner's Right to Audit. The Contractor shall keep full and accurate records of all labor and material costs incurred and items billed in connection with the performance of the Work, which records shall be open to inspection, copying, and audit by the Owner or its authorized representatives during performance of the Work and until three years after Final Payment.

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. The Contractor is an independent contractor, and shall not be deemed an agent of the Owner for any reason.

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

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in strict 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 The Contractor represents that it has visited the Project site, become generally familiar with local conditions under which the Work is to be performed, correlated personal observations with requirements of the Contract Documents, and has satisfied itself as to the nature and location of the Work, the general and local conditions, including those bearing upon access (including partial or total restrictions on access), transportation, delivery, disposal, staging, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, ground water table or similar physical conditions of the ground, the character, quality and quantity of existing conditions to be encountered, the character of equipment and facilities needed prior to and during the prosecution of the Work and all other matters which can in any way effect the Work or the cost thereof under this Agreement. Any failure by the Contractor to acquaint itself with all the available information concerning these conditions will not relieve the Contractor from any obligation under 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 or its Subcontractors or suppliers 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 and Owner 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 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.

§ 3.2.5 In all cases where Work interconnects with existing facilities, Contractor shall field measure and verify at the site all dimensions relating to such existing facilities. Any conflicts in the Work and the existing facilities which could have been mitigated by the Contractor's obligation to verify the dimensions of the existing facilities shall be promptly rectified by the Contractor at its own expense, and such obligation does not limit the Owner's other rights and remedies under the Contract Documents.

§ 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 to Owner and Architect 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. The Contractor shall not proceed performing the Work using its alternative means, methods, techniques, sequences, or procedures without written approval from the Architect.

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

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

§ 3.3.4 The Contractor shall coordinate inspections by governmental authorities having jurisdiction over the Work.

§ 3.3.5 No inspection performed or failed to be performed shall be a waiver of any of the Contractor's obligations hereunder.

§ 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 written 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.

§ 3.4.4 The Contractor shall not at any time permit on the Project site any alcohol or controlled substances whether inside or outside of buildings or structures. Possession or use of any of the foregoing at or adjacent to the site shall obligate the Contractor to remove such offending personnel from the site and replace them at no additional cost to the Owner.

§3.4.5 The Contractor and any Subcontractors shall conform to labor laws of the State and various acts amendatory and supplementary thereto and to other laws, ordinances and legal requirements applicable thereto. Contractor shall enforce among all personnel directly or indirectly employed by it, and among all Subcontractors and their employees, all rules which the Owner may establish for conduct of such personnel on the site.

§3.4.6 The Contractor shall pay prevailing wages in accordance with and shall fully comply with all requirements of the Prevailing Wage Act, 820 ILCS 130/0.01, *et seq.* This Agreement calls for the construction of a "public work," within the meaning of the Illinois Prevailing Wage Act, 820 ILCS 130/0.01 *et seq.* ("the Act"). The Act requires contractors and subcontractors to pay laborers, workers and mechanics performing services on public works projects no less than the current "prevailing rate of wages" (hourly cash wages plus amount for fringe benefits) in the county where the work is performed. The Department publishes the prevailing wage rates on its website at <http://labor.illinois.gov/>. The Department revises the prevailing wage rates and the contractor/subcontractor has an obligation to check the Department's web site for revisions to prevailing wage rates. For information regarding current prevailing wage rates, please refer to the Illinois Department of Labor's website. All Contractors, Subcontractors, and sub-subcontractors rendering services under this Agreement must comply with all requirements of the Act, including but not limited to, all wage requirements and notice and record keeping duties.

§ 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 shall strictly conform to the requirements of the Contract Documents and shall 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 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 Owner is tax-exempt. Notwithstanding, the Contractor shall pay any applicable sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received, 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 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 immediately 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. Notwithstanding any provision of the Contract Documents to the contrary, any use of an allowance account is subject to the written pre-approval of the Owner.

§ 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 on site. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. The superintendent shall be subject to approval by the Owner and shall not be replaced without the prior written consent of the Owner. The Owner shall have the right to require that the Contractor replace the superintendent, at no additional cost to the Owner, at any time during the duration of the Work if his/her performance is not satisfactory to the Owner.

§ 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 Owner or 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 Owner and Architect to provide notice within the 14-day period shall constitute notice of no initial objection, but shall not affect Owner's right to make a subsequent rejection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent.

§ 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.

§ 3.10.1.1 The Contractor's construction schedules shall be in a bar chart format, and shall depict, at a minimum, activity identification and durations, critical path, float, early start, early finish, late start, and late finish.

§ 3.10.1.2 The float in the construction schedules will not be deemed exclusively available to the Contractor or Owner, but rather shall be available to either party as needed.

§ 3.10.1.3 No less than once per month, the Contractor shall submit an updated construction schedule. The updated construction schedule shall depict actual start and completion dates for Work commenced and, if appropriate, Work completed. Additionally, the updated construction schedules shall depict updated estimates of anticipated commencement and completion dates for all upcoming Work.

§ 3.10.1.4 The Contractor's submission of the initial construction schedule and monthly schedule updates shall be conditions precedent to certification of the Contractor's application for payment.

§ 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. If the Contractor fails to adhere to the approved construction schedule(s), Contractor shall immediately, at its own expense, take necessary measures to remedy such failure, including addition of personnel and/or equipment, overtime, and/or additional shifts. The Owner shall be entitled to rely on Contractor's schedules for coordination of its own activities, as well as the activities of other contractors working at the Project site or on the Project.

§ 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 (collectively the "As-Built Documents"). These As-Built Documents shall be in electronic form or paper copy, available for inspection by the Architect or Owner upon reasonable notice, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed. Adequate maintenance of the As-Built Documents shall be a condition precedent to certification of the Contractor's applications for payment.

§ 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 Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by 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 Architect has 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 the site access plan, if any, and to the 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. Throughout the progress of the Work the Contractor shall continually remove from the Project Site and from any adjacent property, all waste, scraps, tools, equipment, storage facilities, machinery, trailers, and vehicles no longer required for prosecution of the Work, such that the Project site remains clean, orderly, and safe.

§ 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 Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, or the Contractor has reason to believe that the required design, process, or product is an infringement, 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 and litigation expenses (including expert witness fees), arising out of or resulting from performance of the Work, but only to the extent caused by Contractor's breach

of contract or 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. 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.

§ 3.18.3 "Claims, damages, losses and expenses" as these words are used herein shall be construed to include, but not be limited to (1) injury or damage resulting from the failure of or use or misuse by Contractor, its Subcontractors, agents, servants or employees, of any hoist, rigging, blocking, scaffolding, or any and all other kinds of items of equipment, whether or not the same be owned, furnished or loaned by Owner; (2) all attorneys' fees and costs incurred in defense of the claim or in bringing an action to enforce the provision of this Indemnity or any other indemnity contained in the Contract Documents, including the fees charged by the indemnitee's expert witnesses; and (3) all costs, expenses, lost time, opportunity costs and other similar indirect or incident damages incurred by the party being indemnified or its employees, agents or consultants.

§ 3.18.4 In the event that the Contractor or its Subcontractors are requested to, but refuse to, honor the indemnity obligations hereunder or to provide a defense, then in addition to all other obligations hereunder, the Contractor and its Subcontractors shall reimburse the Owner and Architect the cost of any legal action concerning Contractor's or Subcontractor's duty to defend and indemnify under this Agreement, including attorneys' fees, time expended, costs and expenses.

§ 3.18.5 The Contractor hereby knowingly and intentionally waives the right to assert, under the case of *Kotecki v. Cyclops Welding Corp.*, 146 Ill.2d 155 (1991) that Contractor's liability may be limited to the amount of its statutory liability under the Workers' Compensation Act, and agrees that Contractor's liability to indemnify and defend the Owner and Architect is not limited by the so called "Kotecki Cap". The Contractor shall include this provision in each of its Subcontract agreements and shall require its Subcontractors to be so bound.

§ 3.18.6 The Contractor shall include in each and every Subcontract with any and all Subcontractors and/or material suppliers performing Work and require each and every Subcontractor and/or material supplier performing Work to agree to be bound by all of the provisions 3.18.1 through 3.18.10 under the Contract Documents.

§ 3.18.7 The Contractor's indemnity obligations hereunder shall specifically include all claims and judgments which may be made against the indemnitees under federal or state law or the law of the other governmental bodies having jurisdiction, and further, against claims and judgments arising from violation of public ordinances and requirements of governing authorities due to Contractor's or Contractor's employees' method of execution of the Work.

§ 3.18.8 The provisions of this Section 3.18 are not intended to conflict in any way with the Construction Contract Indemnification for Negligence Act, 740 ILCS 35/0.01 *et seq.* and shall be interpreted in accordance therewith.

§ 3.18.9 The Contractor shall indemnify and hold harmless the Owner in the event of labor or trade union conflicts or disputes between the Contractor and Subcontractors and their respective employees. The Contractor shall endeavor to adjust and resolve such conflicts and disputes which affect the timely completion of the Work. Such conflicts or disputes shall not be a basis or excuse for the breach of the Contract Documents by the Contractor or its Subcontractors, and shall not provide the Contractor with relief from complying with dates for Substantial Completion or Final Completion. Labor or trade union disputes that affect production or delivery of materials or equipment, or the installation, shall be at no cost to the Owner. The Contractor shall notify the Architect and the Owner in writing as soon as possible as to any labor or trade disputes which may affect the Work and its timely completion. In such event, the Contractor shall provide a written proposal to the Architect and the Owner which includes any comparable substitution(s) necessary to complete the Work.

§ 3.18.10 None of the foregoing provisions shall deprive the Owner or the Architect of any action, right or remedy otherwise available to them or either of them at law.

§ 3.19 If the Work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Architect or the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the Work of any particular trade. Such arrangements are subject to written pre-approval of Owner and Architect. In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of the conflict involving any such agreement or regulation, the Architect may require that other material or equipment of equal kind and quality be provided at no additional cost to the Owner.

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 or the Contract Documents.

§ 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 endeavor to 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 and the Owner each have 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 nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Owner or 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 of the information given with 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 authority of the Architect's Project representative is limited by the Owner's policies and procedures, and by the terms and conditions of the agreement between the Owner and Architect. 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 and if approved in writing by the Owner.

§ 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 If this Project is utilizing a construction manager at-risk, then when the lowest, responsive and responsible multiple prime trade bidder(s) are identified and awarded contracts by the Owner, each such award shall constitute the automatic assignment of that trade contract by the Owner to the construction manager, who is also known as the "Contractor". Each such successful bidder shall then be known as a "Subcontractor." If this Project is utilizing a single general contractor or multiple prime trade contractors, and the Project is not utilizing a construction manager-at risk, then there shall be no such assignment. In any case, 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 Reserved.

§ 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 Subcontractor acknowledges: (1) that the Owner is a direct intended third party beneficiary of each Subcontract between the Contractor and Subcontractor; (2) that notwithstanding any contract provision to the contrary, Subcontractor shall be bound to perform the Work in accordance with these AIA A201 General Conditions, as amended; and (3) that the Subcontractor is not a third party beneficiary of any contract between Contractor and Owner.

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, 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 Reserved.

§ 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, and upon such further assignment, the Owner shall have no further liability to such subcontractor.

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 or other construction or operations on the site with the Owner's own forces, and with Separate Contractors. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

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

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with 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.

§ 6.2 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.

§ 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. Subject to Article 15, 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 Reserved.

§ 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 allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 The Owner may, without invalidating the Contract and without notice to the surety, direct changes in the Work. 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.

§ 7.1.4 No Change Order shall be approved or paid unless preceded by a written direction for the Change Order is provided by the Owner. This requirement cannot be waived by conduct, custom, or practice with respect to this Project or other projects. There shall be no implied or constructive change orders.

§ 7.2 Change Orders

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

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

§ 7.2.2 No payment for changes in the Work shall be made until such change has been memorialized in an executed Change Order and the Change has been executed.

§ 7.2.3 If the Contractor is also the Project's Construction Manager pursuant to a separate construction management agreement with the Owner, the Contractor shall not be permitted any markup on Change Orders or compensation with respect to Change Orders, other than as may be provided in such construction management agreement. The Subcontractors, and any Contractor who is not serving as Construction Manager for the Project, shall be entitled to the following markups for additive Changes Orders, and shall be required to take the following mark-downs for deductive Change Orders. Additional markup for insurance or bonds will not be allowed. All Change Order requests must be submitted with the following backup information or they will not be reviewed or processed by the Architect or Owner: material and labor quantities, material unit costs, labor rates, and any other substantiating data to explain and substantiate the Change Order amount.

Markups and Markdowns for Change Orders:

Additive Change Order: 10%

Deductive Change Order: 10%

§ 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 for the purposes of defining the change and/or how any payment shall be calculated, but not for the purpose of approving payment.

§ 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 Section 7.2.3. 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. Upon execution by the Owner, such agreement shall be effective 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 or net decrease, if any, with respect to that change.

§ 7.3.9 Reserved.

§ 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. The Contractor shall achieve Final Completion within thirty (30) days following Substantial Completion.

§ 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 a cause that (1) was reasonably unforeseeable to the Contractor; and (2) is not within the Contractor's control, then the Contract Time shall be equitably extended and such extension shall be reduced to a Change Order.

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

§ 8.3.3 Extension of Contract Time pursuant to this Article 8 shall be the Contractor's sole and exclusive remedy for delay.

§ 8.3.4 Extension of Contract Time resulting from Changes in the Work shall be negotiated into respective Change Orders. Whenever the Contractor seeks an adjustment in the Contract Time as part of a Claim or Change Order, the Contractor shall justify the request with proper written reference to the approved construction schedules. All executed Change Orders shall be deemed to include adjustments in the Contract Time, if any, resulting from the underlying Change in the Work.

§ 8.3.5 In addition to other rights and remedies set forth elsewhere in the Contract Documents, the Contractor shall reimburse the Owner for all Architect's fees and expenses for additional services necessitated by (1) Contractor's failure to achieve Substantial Completion within the time established in the Contract Documents; (2) for more than one inspection to determine Substantial Completion; and (3) for more than one inspection to determine Final Completion.

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. If the Contractor is also the construction manager pursuant to a construction management agreement with the Owner, that agreement contains any and all additional compensation payable to the Contractor in its role as construction manager.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated for any one item of material or equipment are changed by more than 25% in a proposed Change Order or Construction Change Directive, the applicable unit prices shall be equitably adjusted in such Change Order or Construction Change Directive.

§ 9.2 Schedule of Values

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 Subcontracts. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. Each section of the schedule organized by Subcontract shall further allocate each Subcontractor's Work into discrete tasks with values corresponding to each task. The total of all values for all tasks for all Subcontractors shall equal the Contract Sum. Portions of the Work not subcontracted shall be allocated into discrete tasks and corresponding values. 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. Approval by the Owner of the schedule of values (and revisions thereto) shall be a condition precedent to certification of Contractor's applications for payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values 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, including copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if

provided for in the Contract Documents. The Contractor's inclusion in an Application for Payment of an amount owed to a Subcontractor shall constitute the Contractor's certification to the Owner that such Subcontractor is entitled to payment in that amount, and that there are no backcharges, Claims, or other disputes then pending or anticipated which may impact that Subcontractor's right to such payment. Contractor shall submit all Applications for Payment in a consistent format.

§ 9.3.1.1 Such applications may include requests for payment on account of changes in the Work that have been properly authorized by Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor has not approved payment to a Subcontractor or supplier, unless such Work has been performed by others and the Contractor has approved said payment.

§ 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.

§ 9.3.4 All Applications for Payment shall be accompanied by lien waivers from the Contractor and applicable Subcontractors. The lien waivers, when taken together, shall equal the sum due and paid under the immediately preceding Application for Payment, and shall be effective through the submittal date of the immediately preceding Application.

§ 9.3.5 All Applications for Payment shall be accompanied by the Contractor's and Subcontractors' certified payrolls as required by the Illinois Prevailing Wage Act, 820 ILCS 130/5.

§ 9.3.6 Submission of properly executed lien waivers and the certified payrolls are conditions precedent to certification of each Application for Payment.

§ 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, or if any other condition precedent to payment has not occurred. 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 failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 If Contractor disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, Contractor 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 accordance with the Local Government Prompt Payment Act, 50 ILCS 505/1, et seq. and as may be otherwise 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. In the sole discretion of the Owner, if the Contractor fails to furnish evidence as required by this Section, the Owner has the right, but not the obligation, to pay Subcontractors and suppliers directly.

§ 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 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.

§ 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 at any time there is evidence of any liens or claims for which the Owner may become liable, the Owner shall have the right to retain, out of any payment due or thereafter to become due to Contractor or a Subcontractor, an amount sufficient to completely indemnify and defend the Owner from and against such lien or claim, including any reasonable attorneys' fees and litigation expenses that have been or may be incurred by the Owner. Should any such evidence be established after all payments are made, the Contractor or Subcontractor shall repay the Owner all sums which the Owner may be compelled to pay in discharging such lien or claim, including all reasonably attorneys' fees, litigation expenses, and other costs resulting from such lien or claim.

§9.6.9 The Owner shall withhold ten percent (10%) from all progress payments to the Contractor as retention. The Contractor shall request retention with its final Application for Payment as provided in Section 9.10. No interest shall accrue on monies held in retention. Contractor shall ensure that each contract between Contractor and each Subcontractor contains this same provision for the withholding and release of retention.

§ 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 without any interference resulting from Contractor's operations or from incomplete work. The Work is not substantially complete until all Project systems included in the Work are operational as designed and scheduled, all required governmental inspections and certifications have been made and obtained, designated instruction of the Owner's personnel in the operation of systems has been completed and documented, and all final finishes required by the Contract Documents have been installed. The Work is not substantially complete until the Contractor has submitted the following items to the Owner or Architect::

- .1 All As-Built Documents in conformance with the Contract Documents and the requirements of this Agreement;
- .2 All operations and maintenance manuals as required by the Contract Documents;
- .3 All manufacturers' warranties as required by the Contract Documents; if such warranties cannot be executed until the Certificate of Substantial Completion is executed, the Contractor shall submit a warranty specimen as a condition of Substantial Completion, and shall submit the fully-executed warranty prior to Final Completion.

If in the event Contractor does not complete remaining work within thirty (30) days of Substantial completion, Owner shall give the Contractor written notice of the remaining Work to be completed. If the Contractor fails to complete the remaining work to be completed within five (5) days of receipt of the written notice, the Owner reserves the right to complete the remaining Work in accordance with § 2.4 without further notice to the Contractor. All costs incurred by Owner therein shall be offset against Contractor's final payment.

§ 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, which shall be attached to the Certificate of Substantial Completion (the "Punch List"). Failure to include an item on the Punch 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 Punch 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 Punch 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 with the Punch List attached. The Certificate of Substantial Completion 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 Punch 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.

§ 9.8.6 Upon Substantial Completion, the Contractor and Subcontractors hereby assign all vendor and manufacturers' warranties to the Owner, if and to the extent any such warranty identified the Contractor or a Subcontractor, and not the Owner, as the entity to whom the warrantor is obligated.

§ 9.8.7 Liquidated Damages. The parties agree that time is of the essence of this Agreement. If the Contractor fails to achieve final completion of the Work by the Substantial Completion date(s) established in the Contract Documents and/or as established in the approved construction schedules, as may be adjusted by extensions of time contained in fully-executed Change Orders, if any (the "Scheduled Date(s) of Substantial Completion"), the Contractor shall be liable to the Owner for and shall pay the Owner liquidated damages in the amounts listed under Section 0005000 "Supplementary General Conditions", for each and every calendar day between the Scheduled Date(s) of Substantial Completion and the actual date(s) of Substantial Completion, and the Owner may set off and deduct such amounts from payments due, or which may later become due, to the Contractor. The parties stipulate and agree that this provision is fair and reasonable, and the per day rate established in this Section is fair and reasonable, considering the nature of the harm that may be incurred by the Owner as a result of such delay, and the difficulty or impossibility of ascertaining, calculating, and/or proving the actual damages resulting from such delay. The parties stipulate and agree that this Section 9.8.7 is a valid and enforceable liquidated delay damages clause, and is not a penalty.

§ 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 Punch 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 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 All Work depicted on the Contractor's Punch List and thereafter identified in the Architect's inspection shall be completed by Contractor within thirty (30) days of issuance of the Certificate of Substantial Completion. 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, including retention held pursuant to Section 9.6.9, is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no 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, including those fully-executed warranties required by Section 9.8.1.1 to be furnished prior to final completion, and (6) final 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, along with the final submittal of certified payroll as provided by Section 5 of the Prevailing Wage Act, 820 ILCS 130/5. 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, reasonable attorneys' fees, and litigation expenses.

§ 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, and shall not constitute a waiver of Claims. Otherwise, if the Contractor does not complete remaining work within thirty (30) days after Substantial Completion, Owner may complete the remaining Work and backcharge the Contractor in accordance with Section 2.5. All related costs incurred by Owner shall be deducted from Contractor's final payment, and if the amount of Contractor's final Application for Payment is insufficient to cover such costs, Contractor shall pay such insufficiency to Owner upon demand.

§ 9.10.4 Reserved.

§ 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 specifically 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 solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. Neither the Owner nor the Architect shall be responsible for any safety precautions or programs in connection with the Work.

§ 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 any person suffers injury or damage to person or property because of an act or omission of a party, or of others for whose acts such party is legally responsible, the responsible party shall give notice of the injury or damage, whether or not insured, 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. By Change Order, the Contract Time shall be equitably extended.

§ 10.3.3 Reserved.

§ 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 procurement, delivery, unloading, loading, stockpiling, storing, preparing, installing, use and/or handling of such materials or substances (collectively, "handling").

§ 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 faultily or 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 Reserved.

§ 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, and the Subcontractors, to the extent applicable as specified below, 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 this Section 11.1 and its subparts and elsewhere in the Contract Documents. To the extent of any conflict between this Section 11.1 and other Contract Documents, the Contractor and Subcontractors shall purchase and maintain the insurance with the higher limits, broader coverage, and better protections for the Owner. The Contractor and Subcontractors 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. Such coverage shall be procured on an occurrence basis. Such coverage shall be procured from insurers with a Best's Key Rating Guide rating of at least A / VIII. The Owner, Architect, and Architect's consultants shall by endorsement be named as additional insureds under the Contractor's and each Subcontractor's commercial general liability policy, automobile liability policy, and excess or umbrella policy, all on a primary and noncontributory basis.

§ 11.1.1.1 Commercial general liability insurance including coverage for contractual liability and completed operations, explosion, collapse and underground hazards, covering personal injury, bodily injury and property damage, in the amount of Two Million Dollars (\$2,000,000) per occurrence and Two Million Dollars (\$2,000,000) aggregate.

§ 11.1.1.2 Automobile liability insurance, including hired, rented, and non-owned vehicles, covering personal injury, bodily injury and property damage, with a combined single limit of One Million Dollars (\$1,000,000).

§ 11.1.1.3 Umbrella / excess insurance coverage with a limit of at least Five Million Dollars (\$5,000,000).

§ 11.1.1.4 Workers' compensation insurance in the amount of the statutory minimum with an employer's liability coverage of at least One Million Dollars (\$1,000,000).

§ 11.1.1.5 The Contractor, and Subcontractors as applicable, shall maintain the insurance required by this Section 11.1 without interruption from the date of the Agreement until the date of final payment, and, with respect to their completed operations coverage, until three (3) years after Substantial Completion of Work, or for such other period for maintenance of completed operations coverage as specified in the Contract Documents, whichever is greatest.

§ 11.1.1.6 Prior to commencement of the Work, and again prior to the expiration of any policy, the Contractor and all Subcontractors shall furnish to the Owner and Architect certificates of insurance, policy declarations, all policy endorsements, and if requested by the Owner the policies, all reflecting the insurance required by this Section 11.1. An additional certificate and endorsements evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted by Contractor and all Subcontractors with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the time permitted for expiration. If any aggregate limit is reduced on account of claims paid, Contractor and Subcontractor shall immediately notify the Owner and Architect in writing of the amount of such reduction.

§ 11.1.1.7 Failure of either the Architect or Owner to demand certificates of insurance and/or policies and/or endorsements shall not constitute a waiver of the Contractor's and Subcontractor's responsibilities under this Section 11.1. Nor shall review and/or approval by either the Owner or Architect in any way relieve Contractor or any Subcontractor of its responsibility for furnishing sufficient insurance.

§ 11.1.1.8 Liability of Contractor or Subcontractor is not limited by these insurance requirements or by actual insurance coverage. Nothing related to insurance requirements in the Contract Documents is to be construed as limiting the liability of the Contractor, the liability of any Subcontractor of any tier, or the liability of the Architect, or any of their respective insurance carriers. Owner does not represent that the coverages or limits of insurance specified are sufficient or adequate to protect the Owner, Contractor, Architect, or any Subcontractor's interest or liabilities, but are merely minimums.

§ 11.1.1.9 Each Subcontractor shall comply with all requirements of this Section 11.1, except that the Owner may in writing excuse a Subcontractor from procuring and maintaining an excess / umbrella policy in conformance with Section 11.1.1.3, where deemed appropriate by the Owner, in its sole discretion.

§ 11.1.2 The Contractor as principal shall furnish to the Owner as obligee bonds covering faithful performance of the Contract and payment of obligations arising from the Contract. The payment and performance bonds shall strictly comply with the Public Construction Bond Act, 30 ILCS 550/0.01, *et seq.* (the "Act"), and with all provisions of this Section 11.1.2 and its subparts to the extent not in conflict with the Act. 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. Each such surety shall have a Best's Key Rating Guide rating of at least A / VIII.

§ 11.1.2.1 The payment and performance bonds shall be executed on AIA Document A311 or A312, or on another form acceptable to the Owner, and shall include a penal sum equivalent to or greater than the Contract Sum as defined in Section 9.1.1. If the Project involves a Contractor who is also serving as a construction manager at risk that will take or has taken assignment of trades pursuant to Section 5.1.1, then for purposes of determining the penal sum of the bond, the Contract Sum means the aggregate sum of all bids awarded by the Owner and assigned to the Contractor as provided in Section 5.1.1.

§ 11.1.2.2 All terms and conditions of all Contract Documents, including those that comprise these A201 General Conditions, as amended, shall be deemed incorporated by reference into each bond furnished in connection with this Section 11.1.2. In case of any conflict between any provision of any performance or payment bond and the Contract Documents, the provisions of the Contract Documents shall prevail to the extent of such conflict. Any provision of any bond purporting to create a condition precedent for Owner not otherwise contained in the Contract Documents, or which otherwise purports to abrogate or nullify the Owner's rights or remedies otherwise available in contract, law,

or equity, is void. If any provision of any bond purports to shorten the period of limitations and/or the period of repose as provided in Section 13-214 of the Code of Civil Procedure, 735 ILCS 5/13-214, or if any provision of any bond purports to shorten any other applicable statute of limitation or repose, such provision of such bond shall be null and void, but all other provisions of such bond shall remain enforceable.

§ 11.1.2.3 No surety shall assert solvency of its principal or its principal's denial of default as a defense to any claim under any bond furnished in accordance with this Section 11.1.2.

§ 11.1.2.4 If any surety shall make any assignment for the benefit of creditors or commit any act of bankruptcy, or is declared bankrupt, or if it shall file a voluntary petition in bankruptcy, or shall in the opinion of the Owner be insolvent, the Contractor shall immediately upon request by the Owner furnish and maintain other bonds satisfactory to the Owner. No further payment shall be due nor shall be made to Contractor until the new surety or sureties shall have met the Owner's qualifications.

§ 11.1.2.5 If at any time the Owner shall become reasonably dissatisfied with any surety, or for any other reason such bonds shall cease to be adequate security for the Owner, Contractor shall, within five (5) days after notice to do so, substitute acceptable bonds in such form and sum and signed by such other surety or sureties as may be reasonably satisfactory to the Owner. No further payment shall be deemed due nor shall be made to Contractor until the new surety or sureties shall have met the Owner's qualifications.

§ 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. The Owner may furnish bonds to any person, at any time, without consent of the Contractor.

§ 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 but not the obligation 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 Builder's Risk Insurance

§ 11.2.1 The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the Contract Sum, as modified by Change Orders, comprising the total value for the entire Project at the site on a replacement cost basis. Any required deductible shall be paid by the Contractor unless the Contract Documents otherwise provide or the Owner acknowledges its obligation to pay such deductibles in writing and prior to commencement of the Work. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.2.1 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.2.2 Reserved.

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

furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide required insurance.

§ 11.3 Reservation of Subrogation

§ 11.3.1 The parties' respective rights of subrogation are reserved.

§ 11.3.2 Reserved.

§ 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.

§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 Contractor as fiduciary and made payable to the Contractor 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 Contractor shall pay the Architect and Owner their just shares of insurance proceeds received by the Contractor, and by appropriate agreements the Architect shall make payments to its consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Contractor shall notify the Owner of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Owner shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Owner does not object, the Contractor shall settle the loss and the Owner shall be bound by the settlement and allocation. Upon receipt, the Contractor 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 Owner timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Contractor 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 Owner's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Owner or Architect, be uncovered for the Owner's or 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 Owner or Architect has not specifically requested to examine prior to its being covered, the Owner or 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 an express written acceptance of such specific condition. The Owner shall give such notice promptly after discovery of the condition. 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 and backcharge the Contractor 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 be extended on specific items of Work identified by the Owner as defective, and such extension shall commence upon the performance of corrective Work by the Contractor pursuant to this Section 12.2. Such extension shall expire one year from the date of completion of such corrective Work.

§ 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 any 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 Owner may seek to enforce that obligation or any other obligation arising under the Contract Documents.

§ 12.2.6 All other warranties and guarantees required by the Contract Documents shall be provided to the Architect prior to Substantial Completion or Final Completion, as applicable, and are separate obligations from the obligations contained in this Section 12.2.

§ 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 by express written notice to the Contractor instead of requiring its removal and correction, in which case the Contract Sum will be reduced by deductive Change Order, 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 State of Illinois without regard for conflict of law principles.

§ 13.1.1 Contractor and each Subcontractor shall comply with the Illinois Human Rights Act, 775 ILCS 5/2-101 *et seq.*, and Contractor and each Subcontractor hereby certifies that he / she / it has and will maintain at all times during the term of this agreement a written sexual harassment policy in accordance with 775 ILCS 5/2-105(A)(4).

§ 13.1.2 Contractor and each Subcontractor hereby certifies pursuant to Section 33E-11 of the Illinois Criminal Code that he / she / it is not barred from bidding on, or contracting in connection with, the Project as a result of a conviction for either bid-rigging or bid rotating under Section 33E-3 or 33E-4 of the Criminal Code.

§ 13.1.3 The Contractor and each Subcontractor hereby certifies that he / she / it will provide a drug free workplace in compliance Section 3 of the Drug Free Workplace Act, 30 ILCS 580/3.

§ 13.1.4 At least once per month prior to final completion of the Work, the Contractor and each Subcontractor shall submit to the Owner certified payrolls in accordance with Section 5 of the Illinois Prevailing Wage Act, 820 ILCS 130/5.

§ 13.1.4 Upon the Owner's request, any employee of the Contractor and any employee of any Subcontractor or other supplier or vendor shall submit state-issued identification documents (e.g. driver's license, state identification card, etc.) or other documents to the Owner and provide the necessary consents so that the Owner may obtain a criminal background check of the employee. No person who fails or refuses to produce such documents may work on the Project at the Project site. Alternatively, the Owner reserves the right to direct the Contractor, at any time during the Project, to immediately obtain criminal background checks of Contractor's or Subcontractor's employees. Such criminal background checks will be performed at Contractor's or Subcontractor's expense and at no additional cost to Owner. If in the Owner's sole discretion objectionable information regarding any employee is discovered in the background check, whether performed by Owner or Contractor, such person shall not be allowed to work on the Project at the Project site. The Owner may request new background checks of any employee at any time.

§ 13.1.5 This Contract is subject to and shall be construed in accordance with all provisions of law applicable to the Work and the Project. All applicable rules of law shall prevail over any conflicting provision contained in any of the Contract Documents.

§ 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. Contractor shall not assign the Contract in whole or in part without written consent of the Owner.

§ 13.2.2 The Contract Documents and these A201 General Conditions provide the rights and obligations by and between Owner, Architect, and Contractor. There are no other beneficiaries to the Contract.

§ 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, without markup by the Architect or Contractor, 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 and without markup by the Architect or Contractor.

§ 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 only in accordance with the Local Government Prompt Payment Act, 50 ILCS 505/1, *et seq.*

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 90 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 Reserved.

§ 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. However, in no event shall Contractor be entitled to overhead and profit on Work not executed, or 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 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 Contract Documents and/or the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of a material breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, including reasonable attorneys' fees, 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 upon demand.

§ 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 equitably adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. 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;
- .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; and
- .4 Immediately assign to the Owner any sub-contractual assignments requested by the Owner pursuant to Section 5.4.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed. However, in no event shall Contractor be entitled to overhead and profit on Work not executed, or costs incurred by reason of such termination.

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. This Section 15.1.1 does not create any conditions precedent on any cause of action the Owner may have against the Contractor.

§ 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 applicable law.

§ 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 the Contractor 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 Contractor 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 If the Owner and Contractor agree with the Initial Decision Maker's decision, the Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision. In the event of such agreement, 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, and timely notice is a condition precedent to any recovery or relief by Contractor on such 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, and such notice is a condition precedent to any recovery or relief by Contractor on such Claim. 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 Reserved.

§ 15.2 Initial Decision

§ 15.2.0 As used in this Section 15.2 and its subparts, "Claims" refers only to Claims by the Contractor, and does not include Claims by the Owner.

§ 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 arbitration or litigation, as the case may be, of any Claim initiated by Contractor and arising prior to the date final payment is due. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the Contractor may commence litigation without a decision having been rendered, and such litigation shall be subject to the Owner's right to elect arbitration as provided in Section 15.4.1. 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 not be binding.

§ 15.2.7 Reserved.

§ 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 Reserved.

§ 15.4 Arbitration

§ 15.4.1 In the sole and exclusive discretion of the Owner, all claims, disputes and other matters in question between any of the Architect, Owner, Contractor, Surety, Subcontractor or any material supplier arising out of, or relating to, agreements to which two or more of said parties are bound, or the Contract Documents or the breach thereof, shall, in the case of such election by the Owner, be decided by arbitration. If the Owner elects such arbitration, it shall be conducted in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then in effect at the time that the demand is made, as modified herein. In any such arbitration, the arbitrator shall make separate findings as to liability and the amount of damages with respect to each party to the arbitration to the extent any liability or responsibility for damages exists. The Architect, surety, subcontractors and material suppliers who have an interest in the dispute shall be joined as parties to the arbitration. The arbitrator shall have authority to decide all issues between the parties. The foregoing option of the Owner to arbitrate and any other agreement to arbitrate with an additional person or persons, duly consented to by the parties, shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrator shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.1.1 If the Owner elects arbitration, in its sole discretion, notice of the demand for arbitration shall be filed in writing with the other part(ies) to the arbitration and with the American Arbitration Association. Such demand for arbitration shall be made within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would otherwise be barred by an applicable statute of limitations or repose. Whether such limitations have been met shall be decided by the arbitrator if contested by a party.

§ 15.4.1.2 All parties shall carry on the Work and perform their duties during any arbitration proceedings, and the Owner shall continue to make payments to the extent required by the Contract Documents. However, at the request of any party, contested payments may be placed in an escrow account pending resolution of the dispute.

§ 15.4.1.3 If the Owner elects arbitration, in its sole discretion, in addition to the other rules of the American Arbitration Association applicable to any arbitration hereunder, the following shall apply:

.1 Promptly after the impaneling of the arbitrator, the arbitrator shall establish a procedure for each party to set forth in writing and to serve upon each other party a detailed statement of its contentions of fact and law, along with appropriate responses thereto;

.2 All parties to the arbitration shall be entitled to reasonable discovery procedures as provided by the Illinois Code of Civil Procedure and Illinois Supreme Court Rules, as supplemented by rules to be established by the arbitrator;

.3 The arbitration shall be commenced and conducted as expeditiously as possible consistent with affording reasonable discovery as provided herein. Similarly, the scope of discovery, and the extent of proceedings hereunder relating to discovery, shall be consistent with the parties' intent that the arbitration be conducted as expeditiously as possible.

§ 15.4.2 In the event of any litigation or arbitration between the parties hereunder, the Contractor shall pay the Owner's reasonable attorneys' fees and court costs to the extent the court or tribunal determines the Owner is the prevailing party.

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DRAFT AIA[®] Document A310[™] - 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

<< >> << >>

SURETY:
(Name, legal status and principal place of business)

<< >> << >>

OWNER:
(Name, legal status and address)

<< >> << >>

BOND AMOUNT: \$ << >>

PROJECT:
(Name, location or address, and Project number, if any)

«Blank»

<< >> << >>

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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(Witness)

(Witness)

(Title)



DRAFT AIA[®] Document A312™ - 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

 << >>< >>
 << >>

SURETY:
(Name, legal status and principal place of business)

 << >>< >>
 << >>

OWNER:
(Name, legal status and address)

 << >>< >>
 << >>

CONSTRUCTION CONTRACT

Date: << >>

Amount: \$ << >>

Description:

(Name and location)

<<Blank>>

<< >>

BOND

Date:

(Not earlier than Construction Contract Date)

<< >>

Amount: \$ << >>

Modifications to this Bond: << >> None << >> See Section 16

CONTRACTOR AS PRINCIPAL

 Company: *(Corporate Seal)*
SURETY

 Company: *(Corporate Seal)*

Signature:

Name and << >>< >>

Title:

(Any additional signatures appear on the last page of this Performance Bond.)

Signature:

Name and << >>< >>

Title:

(FOR INFORMATION ONLY — Name, address and telephone)
AGENT or BROKER:

 << >>
 << >>
 << >>

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to

the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

Signature:

Name and Title:

Address:

« »« »

« »

SURETY

Company:

(Corporate Seal)

Signature:

Name and Title:

Address:

« »« »

« »

DRAFT AIA[®] Document A312[™] - 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

<< >>< >
<< >>

SURETY:

(Name, legal status and principal place of business)

<< >>< >
<< >>

OWNER:

(Name, legal status and address)

<< >>< >
<< >>

CONSTRUCTION CONTRACT

Date: << >>

Amount: \$ << >>

Description:

(Name and location)

<<Blank>>

<< >>

BOND

Date:

(Not earlier than Construction Contract Date)

<< >>

Amount: \$ << >>

Modifications to this Bond: << >> None << >> See Section 18

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature:

Name and << >>< >

Title:

(Any additional signatures appear on the last page of this Payment Bond.)

Signature:

Name and << >>< >

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

<< >>
<< >>
<< >>

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

<< >>
<< >>
<< >>
<< >>
<< >>
<< >>

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature:

Name and Title:

Address:

« »« »

« »

Signature:

Name and Title:

Address:

« »« »

« »

EXHIBIT "F"

AIA® Document G702™ - 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO: 001	Distribution to:
FROM	VIA	PERIOD TO:	OWNER: <input type="checkbox"/>
CONTRACTOR:	ARCHITECT:	CONTRACT FOR: General Construction	ARCHITECT: <input type="checkbox"/>
		CONTRACT DATE:	CONTRACTOR: <input type="checkbox"/>
		PROJECT NOS: / /	FIELD: <input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM.....	\$0.00
2. NET CHANGE BY CHANGE ORDERS.....	\$0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	\$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703).....	\$0.00
5. RETAINAGE:	
a. 0 % of Completed Work	
(Column D + E on G703: \$0.00)=	\$0.00
b. 0 % of Stored Material	
(Column F on G703: \$0.00)=	\$0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703).....	\$0.00
6. TOTAL EARNED LESS RETAINAGE.....	\$0.00
(Line 4 Less Line 5 Total)	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....	\$0.00
(Line 6 from prior Certificate)	
8. CURRENT PAYMENT DUE.....	\$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE	
(Line 3 less Line 6)	\$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____

Date: _____

State of: _____

County of: _____

Subscribed and sworn to before

me this

day of

Notary Public: _____

My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED.....\$0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____

Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

DRAFT AIA[®] Document G709[™] - 2001

Work Changes Proposal Request

PROJECT (Name and address):
Blank

PROPOSAL REQUEST NUMBER: 001

DATE OF ISSUANCE:

OWNER (Name and address):

CONTRACT FOR: General Construction

CONTRACT DATE:

FROM ARCHITECT (Name and address):

ARCHITECT'S PROJECT NUMBER:

TO CONTRACTOR (Name and address):

OWNER: ☐

ARCHITECT: ☐

CONSULTANT: ☐

CONTRACTOR: ☐

FIELD: ☐

OTHER: ☐

Please submit an itemized proposal for changes in the Contract Sum and Contract Time for proposed modifications to the Contract Documents described herein. Within Zero (0) days, the Contractor must submit this proposal or notify the Architect, in writing, of the date on which proposal submission is anticipated.

THIS IS NOT A CHANGE ORDER, A CONSTRUCTION CHANGE DIRECTIVE OR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED IN THE PROPOSED MODIFICATIONS.

DESCRIPTION (Insert a written description of the Work):

ATTACHMENTS (List attached documents that support description):

REQUESTED BY THE ARCHITECT:

(Signature)

(Printed name and title)

EXHIBIT "H"

CORDOGAN CLARK & ASSOCIATES

960 RIDGEWAY AVENUE ▪ AURORA, ILLINOIS 60506 ▪ T: 630.896.4678 ▪ F: 630.896.4987 ▪ CORDOGANCLARK.COM

REQUEST FOR INFORMATION

Project Name:

CCA Project No.:

CCA RFI No:

Date Submitted:

Date Required:

FROM

TO

Contractor:

Contact:

Phone:

Email:

Subject:

Attachments:

Question:

Proposed Solution:

Response:

Attachments:

Response Date:

Responder Name:

Statement of Liability Limitation for Electronic Transfer of Design

Date:

To: Name
Company

From: Name
Cordogan, Clark & Associates

Re: East Aurora School District #131 – Fire Panel Replacement Project
CCA Project No.: 24-1056

The enclosed computer disk(s) or following electronic transmission of data, information or documents have been provided to Company Name (Receiver) at the request of Name. The information transmitted therein pertains to East Aurora School District #131 – Fire Panel Replacement Project, Cordogan, Clark & Associates Project #24-1056. See below for the list of specific files being transmitted.

Use of the above-described information shall be deemed as an agreement and notice to the following:

1. Provided Cordogan, Clark & Associates, Inc. CCA exercises reasonable care in the electronic or disk transmission of data, information or documents to the above indicated receivee, the receivee shall be responsible for and solely bear all damages, losses or expenses it or Cordogan, Clark & Associates, its employees, officers and consultants incur as a result of:
 - a. Errors or defects introduced by such transmission
 - b. The Receivees' and its independent contractors' or agents' automated conversion or reformatting of the data, information or documents transmitted
 - c. Defects or errors in the Receivees' and its independent contractors' or agents' software or hardware utilized to receive, transmit, utilize, format or reproduce data, information or documents
2. Provided Cordogan, Clark & Associates and its consultants have exercised reasonable care in the selection and operation of hardware and software for its computer aided design services, Cordogan, Clark & Associates shall not be responsible or liable for errors, defects, inaccuracies or anomalies in data, information of documents (including drawings and specifications) caused by:
 - a. Cordogan, Clark & Associates or its consultants' computer software or hardware defects or errors
 - b. Cordogan, Clark & Associates consultants' electronic or disk transmittal of data, information or documents
 - c. Cordogan, Clark & Associates reformatting or automated conversion of data, information or documents electronically or disk transmitted from Cordogan, Clark & Associates' consultants to Cordogan, Clark & Associates

Receivee waives all claims against Cordogan, Clark & Associates, its employees, officers and consultants for damages, losses or expenses it incurs arising from such defects or errors.
3. If as otherwise permitted by this Agreement, the Receivee shall electronically or by disk transmit data, information or documents (including drawings and specifications) to persons other than Cordogan, Clark & Associates, the Receivee shall be responsible for and solely bear all damages, losses or expenses arising from:
 - a. errors or defects introduced by such transmission
 - b. errors or defects introduced by such persons retransmission, automated conversion, reformatting, or reproduction of such data, information or documents
4. Receivee shall indemnify, defend and hold Cordogan, Clark & Associates and its consultants, together with their respective employees and officers, harmless from and against any claims, suits, demands, causes of action, losses, damages or expenses (including all attorneys' fees and litigation expenses) resulting or arising from errors of defects in data, information or documents, including drawings and specifications, caused or introduced by the Receivee (or its independent contractors and agents):
 - a. Provision or transmission of data, information or documents to Cordogan, Clark & Associates
 - b. Re-transmission, automated conversion, reformatting or reproduction of Cordogan, Clark & Associates created data, information or documents
 - c. Use of defective, erroneous or incompatible software or hardware.

By: _____

Accepted: _____

Company _____

Title: _____

Date: _____

EXHIBIT "J"

Verify that all of your Illinois Sales Tax Exemption Certificate information is correct

- ✓ If not, contact us immediately.
- ✓ **Do not discard** - your Illinois Sales Tax Exemption Certificate is an important tax document that authorizes you to purchase tangible personal property for use or consumption tax-free.

OFFICIAL DOCUMENT State of Illinois - Department of Revenue OFFICIAL DOCUMENT

Illinois Sales Tax Exemption Certificate

AURORA EAST UNIT SCHOOL DISTRICT #131

417 5TH ST
AURORA IL 60505-4700

Sales Tax Exemption Certificate

Issue date: 02/10/2020	Sales Tax Exemption	E99960087
Expiration date: 03/01/2025	Organization type:	Governmental

This entity is authorized under the Retailers' Occupation Tax Act to purchase tangible personal property for use or consumption tax-free.

ILLINOIS REVENUE
Director
Director

OFFICIAL DOCUMENT - DO NOT DESTROY

CONFIRMATION OF CALLED INSPECTION RECORDS☐ **2009 International Building Code Called Inspection Records**

	Called Inspection Type	Approval to Proceed Date	A/E or Qualified Inspector Signature	ISBE ID Number or A/E License Number
1.	Footing			
2.	Foundation			
3.	Concrete Slab / Under-floor			
4.	Lowest Floor Elevation			
5.	Framing			
6.	Lathe and Gypsum Board			
7.	Fire Resistant Penetrations			
8.	Energy Efficiency			
9.	Special Inspection			
10.	Final IBC			

☐ **2009 International Electrical Code (Appendix K) Called Inspection Records**

	Called Inspection Type	Approval to Proceed Date	A/E or Qualified Inspector Signature	ISBE ID Number or A/E License Number
1.	Prefabricated Assembly Evaluation Report			
2.	Underground			
3.	Rough-in			
4.	Final IEC			

☐ **2009 International Energy Conservation Code Called Inspection Records**

	Called Inspection Type	Approval to Proceed Date	A/E or Qualified Inspector Signature	ISBE ID Number or A/E License Number
1.	Foundation (thermal envelope)			
2.	Framing (thermal envelope)			
3.	Insulation (thermal envelope)			
4.	Rough-in "Okay to Cover" (mechanical, service water heating, electrical, lighting)			
5.	Final (mechanical, service water heating, electrical, lighting)			
6.	Final IECC			

☐ **2009 International Fire Code Called Inspection Records**

	Called Inspection Type	Approval to Proceed Date	A/E or Qualified Inspector Signature	ISBE ID Number or A/E License Number
1.	Final IFC			

☐ **2009 International Mechanical and Fuel Gas Code Called Inspection Records**

	Called Inspection Type	Approval to Proceed Date	A/E or Qualified Inspector Signature	ISBE ID Number or A/E License Number
1.	Prefabricated Assembly Evaluation Report			
2.	Underground Piping			
3.	Rough-in			
4.	Final IMC & IFGC			

Documentation of Called Inspections for New Construction

District: _____ Facility: _____ Superintendent: _____

Building Permit Holder (BPH): _____ Contractor: _____

2006 International Building Code	BPH Ready Notification		Inspection (within ____ hours)		Discrepancies Identified During Inspection	Approval to Proceed		A/E or Qualified Inspector	
Minimum Required Inspections	Date	Time	Date	Time	Inspection Item No(s)	Date	Time	Initials	ID No.
I. Footing									
II. Foundation									
III. Concrete Slab / Under-floor									
IV. Lowest Floor Elevation									
V. Framing									
VI. Lathe and Gypsum Board									
VII. Fire Resistant Penetrations									
VIII. Energy Efficiency									
IX. Special Inspection									
X. Final IBC									

2006 IBC Appendix K Electrical Code	BPH Ready Notification		Inspection (within ____ hours)		Discrepancies Identified During Inspection	Approval to Proceed		A/E or Qualified Inspector	
Minimum Required Inspection	Date	Time	Date	Time	Inspection Item No(s)	Date	Time	Initials	ID No.
I. Prefabricated Assembly Evaluation Report									
II. Underground									
III. Rough-in									
VI. Final Electrical									

2006 International Energy Conservation Code	BPH Ready Notification		Inspection (within ____ hours)		Discrepancies Identified During Inspection	Approval to Proceed		A/E or Qualified Inspector	
Minimum Required Inspections	Date	Time	Date	Time	Inspection Item No(s)	Date	Time	Initials	ID No.
I. Foundation THERMAL ENVELOPE									
II. Framing THERMAL ENVELOPE									
III. Insulation THERMAL ENVELOPE									
IV. Rough-in "Okay-to-Cover" MECHANICAL, SERVICE WATER HEATING, ELECTRICAL/LIGHTING									
V. Final MECHANICAL, SERVICE WATER HEATING, ELECTRICAL /LIGHTING									
VI. Final IECC									

2006 International Fire Code	BPH Ready Notification		Inspection (within ____ hours)		Discrepancies Identified During Inspection	Approval to Proceed		A/E or Qualified Inspector	
Minimum Required Inspection	Date	Time	Date	Time	Inspection Item No(s)	Date	Time	Initials	ID No.
I. Final IFC									

2006 International Mechanical & Fuel Gas Code	BPH Ready Notification		Inspection (within ____ hours)		Discrepancies Identified During Inspection	Approval to Proceed		A/E or Qualified Inspector	
Minimum Required Inspections	Date	Time	Date	Time	Inspection Item No(s)	Date	Time	Initials	ID No.
I. Prefabricated Assembly Evaluation Report									
II. Underground Piping									
III. Rough-in "Okay-to-Cover"									
IV. Final IMC & IFGC									

MILESTONE SCHEDULE

East Aurora School District #131 2025 Fire Panel Replacement Projects (Rollins Elementary School)

January 14, 2025	Bid Documents Available
January 16, 2025 10:30AM CST	Mandatory Pre-Bid Meeting (virtual)
January 16-21, 2025	Facilities Walkthroughs (by Appointment)
January 23, 2025 10:00AM CST	Last Day for Bidder Questions
January 30, 2025 10:30AM CST	Bids Due to District Office
January 30-31, 2025	Post-Bid Interviews
February 3, 2025	Presentation to Building and Grounds
February 18, 2025	Presentation to the Board of Education for Approval
February 19, 2025	Notice to Proceed
April 15, 2025	Final date for all submittal submissions Due to CCA
April 29, 2025	Contractor provides verification all materials have been ordered
June 2, 2025	Assumed Last Day of 2024-2025 School Year**
June 4, 2024	Contractor Access
August 15, 2025	Substantial Completion

Footnotes:

1. **Significant dates are in bold**
2. Contingent upon remaining emergency days. Maximum of 5.

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 GENERAL INSTRUCTIONS.

26-1 GENERAL INSTRUCTIONS.

1. All requirements under Division one and the general supplementary conditions of these specifications shall be a part of this section. Each contractor shall be responsible for becoming thoroughly familiar with all its contents as to requirements which affect this division or section. The work required under this section includes all material, tools, equipment, appliances, hoisting, excavation, backfill, restoration, and labor required to complete all the work as required by the drawings and specifications or reasonably inferred to be necessary to facilitate each system functioning as indicated by the design and the equipment specified. Total installation is to conform to all codes and standards affecting the work. Coordinate with the owner. The contractor shall do all alterations and rework required for the proper integration of new with existing areas; any areas outside the work boundary affected by construction activities must be returned to pre-construction condition immediately following the work.

- a. Generate and complete all forms, applications, inspections, and the like necessary for the acquisition of energy incentives available from the utility and government regulating entities.
- b. Public ways and access drives shall be kept free of mud or other debris deposited by any equipment associated with the work. Muddy equipment must be pressure cleaned each time prior to exiting the site. Contractor is completely responsible for his own street cleaning.

2. Inspection of site.

The contractor shall personally inspect the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Use field measurements and observations to prepare bid. Commencement of work infers acceptance of all existing conditions.

3. Material and workmanship.

All material and apparatus shall be new, listed for use by UL, and in first class condition. All material and apparatus shall have markings or nameplate identifying the manufacturer and providing sufficient reference to establish quality, size, and capacity. All workmanship shall comply with published industry standards, including NECA/NEIS, NECA-1-2010, and the American Electrician's Handbook, latest edition. OSHA rules, regulations, and requirements are a part of this contract. Electrical contractor shall follow them as well as state and local requirements for the safety of workers on the job and passers-by.

4. Coordination.

The contractor shall coordinate all work with other contractors and subcontractors so that various components of the electrical system will be installed at the proper time, will fit the available space, and will allow proper service access to all equipment. The contractor shall refer to architectural, structural, and mechanical drawings and relevant equipment drawings to determine the extent of clear spaces. The contractor shall make all offsets required to clear equipment, beams, and other structural members, and to facilitate concealing conduit in the manner anticipated in the design. The contractor shall provide materials with trim which will fit properly the types of ceiling, wall, or floor finish actually installed.

5. Dimensions and layout.

The drawings are schematic in nature and not intended to show every accessory or component necessary for a complete installation. Figured dimensions shall be taken in preference to scale dimensions. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all contract documents. The contractor shall be held responsible for errors which could have been avoided by proper checking and inspection.

- A. Ordinances and codes: Contractor's performance, workmanship, and materials shall comply with all state and local building codes, referenced NFPA codes and standards, local amendments, and/or all other applicable codes and ordinances. Contractor shall comply with rules and regulations of the public utilities and municipal departments affected. Obtain and pay all permits, unless stipulated otherwise in Division 1. Contractor shall be held responsible for any violations of law. Contractor shall maintain all necessary signal lights and guards for the safety of the public. See drawings for additional information.
- B. Substitutions:
 - a. The specification provides that the base bid of all contractors shall include the products specifically named, the contractor being permitted to submit in the form of alternates with his proposal products of any other manufacturers for similar use, provided the difference in cost, if any, is specified in each case. The terms "approved" or "approved equal" shall mean approved by the architect as an acceptable alternate bid. The term "equal" or "available manufacturers" shall mean products similar or identical in appearance, function, or specification to a basis-of-design product and manufactured to directly compete with, replace, or supersede the specified product. The architect shall have final authority as to whether a substitution is an acceptable replacement to the specified item. The proposed substitution may also be rejected for aesthetic reasons. In the event of rejection, the specified item shall be furnished.
 - b. Value Substitutions: The contractor is completely responsible for all substitutions, changes, or deletions of work or products proposed to and accepted by the owner or architect in lieu of specified and shall hold the owner and architect harmless for any liabilities created by such changes. As much as is possible, such proposals for change shall indicate how the specified design goals, the work of other trades, and the construction schedule are expected to be impacted. The contractor is responsible for research of all codes and standards applicable to the proposed change, professional design services necessary to implement the change, re-submittals for state and municipal permits and additional fees invoked by the change, and notification of and coordination with other trades impacted by the change. After acceptance of a change proposal by the owner or architect, the contractor shall notify them within ten calendar days of any unexpected discovered conditions that may impact the work. After this period, the contractor shall not be excused from any liabilities created by their own proposed change(s) and shall be responsible for any discovered costs incurred by anyone due to the change(s).
- C. Adjusting, aligning, and testing: All electrical equipment on this project furnished under this division and all electrical equipment furnished by others and installed by the electrical contractor shall be adjusted, aligned, and tested for proper operation by the electrical contractor. Complete wiring systems shall be free from faults. All motors shall be verified for proper rotation and protection. The contractor shall maintain on the project premises the following at all times: a true rms reading voltmeter and ammeter, a megger insulation resistance tester. The contractor shall provide test data readings as requested or as required.

- D. Operation and maintenance instructions: Submit to the architect three copies, unless indicated otherwise in Division 1, of maintenance and operation instruction manuals appropriately bound into manual form including record copies of the following, revised if necessary to show system and equipment as actually installed: manufacturer catalog sheets, wiring diagrams, maintenance instructions, operating instructions, parts lists. Contractor shall also provide adequate owner's staff training at the termination of the work.
- E. Start up of systems: Prior to startup of the electrical systems, the contractor shall check all components and devices, lubricate items accordingly, and tighten all screwed and bolted connections. Adjust taps on each transformer for rated secondary voltage. Check and record building's service entrance voltage, grounding conditions, ground resistance, and proper phasing. Balance all single phase loads at each panelboard; redistribute branch circuit connections until balance is achieved. Replace all burned-out lamps. Touch-up paint all marred equipment finishes. After all systems have been inspected and adjusted, confirm all operating features required by the drawings and specifications and make final adjustments as necessary.
- F. Building Commissioning: All electrical systems shall be commissioned by the contractor in accordance with NECA 90-2009 (or latest iteration), Recommended Practice for Commissioning Building Electrical Systems (ANSI), available from NECA Order Desk at (301)215-4504, order-desk@necanet.org, or www.neca-neis.org/catalog. Documentation shall be included in the close-out documents.
- G. Guarantee: In addition to warranty requirements of other sections, the contractor shall guarantee against defective workmanship and material for a period of one year from date of final payment. The guarantee shall include material to be replaced and all labor required. Manufacturers' standard guarantees and warranties of longer duration shall be in force.

PART 2 ELECTRICAL INSTALLATION.

- A. Cleaning: Dirt and refuse resulting from the performance of the work shall be removed from the premises as required to prevent accumulation. The contractor shall cooperate in maintaining reasonably clean premises at all times. Immediately prior to final inspection, the contractor shall make a final cleanup of dirt and refuse resulting from his work. The contractor shall clean all material and equipment installed under the electrical contract. Dirt, dust, plaster, stains, and foreign matter shall be removed from all surfaces. Damaged finishes shall be touched up and restored to their original condition.
- B. Cutting and Patching: This contractor shall do all cutting of walls, floors, ceiling etc. as required to install work under this section. The contractor shall obtain permission of the architect or owner before doing any cutting or coring. All holes shall be cut as small as possible. Contractor shall patch walls, floors, etc. as required by work under this section. All patching/repairs shall match the original finish and construction, and be approved by the architect.
- C. Rough-in: Coordinate without delay all roughing-in with general construction. All conduit rough-in shall be concealed except in unfinished areas and where otherwise shown. Conduit sizes indicated on the plan are intended to represent the minimum size necessary to accommodate the specified conductors. The contractor shall select larger trade sizes and longer radius bends where necessary to alleviate excessive pulling tension due to distance, number of bends, and the like.

- D. Firestopping: This contractor shall seal all penetrations through fire rated floor and wall assemblies in accordance with the NFPA codes and UL wall construction types. The sealing system shall be capable of passing a three hour test, per ASTM E-814 (UL 1479). Penetration sealing system shall be acceptable to the AHJ (E.C. to verify) and installed per the manufacturers recommendations. Use silicon type where accumulation of water is an issue. PVC conduit may not be used as a sleeve through fire rated partitions for any reason.
- E. Flashing and pitch pockets: Provide gasketed roof portals (such as RPS or Portals Plus) listed for use with the roofing material as required. All roof penetrations shall be leaktight at the termination of the work.
- F. Access doors: Provide access doors in ceilings, walls, etc. where indicated or required for access to or to maintain work installed under this section. Provide fire rated type in fire-resistance rated elements, gasketed type in showers and locker rooms and similar areas. Such as Milcor or equal.
- G. Equipment identification: This contractor shall furnish and install equipment identification nameplates on all panelboards, safety switches, starters, dimmers, and the like, and wherever mandated by code. Nameplates shall clearly identify each item, its voltage, and what it controls.
- H. Plenum spaces: All equipment and wiring methods in ceiling cavities used as environmental air plenums shall be approved for the application and conform to the NEC.
- I. Seismic Bracing: Verify seismic rating of the structure with the structural plans. Provide approved engineered seismic bracing or anchors where required for lay-in fixtures, cable trays, conduits, enclosures, and the like as required by code.

PART 3. MISCELLANEOUS ELECTRICAL

Wiring of applicable mechanical equipment.

- A. Furnish and install all power wiring and all line voltage control or interlock wiring of all units, pumps, fans, water heaters, air handlers, kitchen equipment, and other equipment and appliances as scheduled in the documents or otherwise indicated or inferred by the body of drawings. Connect per manufacturer's wiring diagrams to be furnished with equipment. Furnish and install all loose disconnects and starters needed or required. After installation the contractor shall verify that each motor load has the correct phase rotation and permanently indicate the rotation on the equipment or it's controller or disconnect. This contractor shall verify the actual wire sizing amps for mechanical equipment from the equipment nameplate; electrical installation shall be based on actual required amperages, which may vary from the wire and equipment sizes shown on the drawings. Properly sized electrical wiring and equipment shall be furnished without extra cost to the contract. The contractor shall notify the architect of all changes to be made in the electrical installation due to equipment variances so that the impact on the feeders, panels, fuses, and breaker sizes can be checked prior to the installation. This contractor shall be responsible for coordinating with the mechanical, refrigeration, and plumbing contractors to verify the actual wire sizing amps and correct sizes of all overload heaters and the like for all equipment
- B. Submittals.
 - a. In addition to Division 1 requirements, submittals shall be made as soon as possible after the award of the contract; product releases shall be scheduled in a timely manner. The contractor shall act promptly to determine lead times and accommodate product availability. The contractor shall prepare a list of released products and delivery dates coordinated with the project construction schedule for distribution to the architect, owner, and pro-

ject manager. Advise the architect immediately of specified or needed products being unavailable or discontinued; any project delays or additional costs resulting from the contractor's neglect of this responsibility shall be at the cost of the contractor.

- b. Provide close-out documents as stipulated by Division 1 and elsewhere in this Division, but not less than all owner's manuals, installation instructions shipped with products, certifications, and warranties. Include installation instructions shipped with equipment.

END OF SECTION 260500

SECTION 260501-ELECTRICAL DEMOLITION FOR REMODELING

A. Dimensions and layout.

The drawings are schematic in nature and not intended to show every accessory or component necessary for a complete installation. Figured dimensions shall be taken in preference to scale dimensions. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all contract documents. The contractor shall be held responsible for errors which could have been avoided by proper checking and inspection.

B. Minor Electrical Demolition.

- a. Demolition and remodel work is to be phased according to areas indicated on the drawings.
- b. The Owner determines which sections of the existing Fire Alarm and/or Fire Suppression systems shall remain in service during any particular phase of demolition.
- c. The Owner determines which sections of any existing system shall remain in or out of service during demolition.
- d. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING OBSERVABLE AND MEASURABLE CONDITIONS.
- e. Disconnect electrical systems in walls, floors, structures, and ceilings scheduled for removal.
- f. Where walls, ceilings, structures, etc., are indicated as being removed on general drawings, the Contractor shall be responsible for the removal of all electrical equipment, devices, fixtures, raceways, wiring, systems, etc., from the removed area.
- g. Where ceilings, walls, structures, etc., are temporarily removed and replaced by others, this Contractor shall be responsible for the removal, storage, and replacement of equipment, devices, fixtures, raceways, wiring, systems, etc.
- h. Where ceilings, walls, structures, etc., must be removed solely to accommodate new electrical work, this Contractor shall be responsible for the removal, storage, and replacement of ceilings, walls, structures, equipment, devices, fixtures, raceways, wiring, systems, etc.
- i. Verify that abandoned wiring and equipment serve only abandoned equipment or facilities. Extend conduit and wire to facilities and equipment that will remain in operation following demolition. Extension of conduit and wire to equipment shall be compatible with the surrounding area.
- j. Coordinate scope of work with all other Contractors and the Owner at the project site. Schedule removal of equipment and electrical service to avoid conflicts.
- k. Bid submittal shall mean the Contractor has visited the project site and has verified existing conditions and scope of work.
- l. Maintain existing Fire Alarm as required by Owner until new system is in place and accepted.

1. Temporary disabling of an in-service system requires that the Owner and/or AHJ be notified 7 days in advance.
 2. Provide fire watch for areas left unprotected by the fire alarm system.
- m. Existing Electrical Service: Maintain existing system. Coordinate outages to occur at a time most convenient to the Owner. Include furnishing two weeks of temporary diesel generator power to critical areas to span the outage when applicable.
 - n. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations. Assume all equipment and systems must remain operational unless specifically noted otherwise on drawings.
 - o. The E.C. is responsible for all temporary lighting and power in all work areas per Division 1. Comply with NECA 200-2010.
 - p. Remove, relocate, and extend existing installations to accommodate new construction. Do not extend or retain rubber insulated wiring (e.g., Types R or RW); all new permanent wire shall comply with wire specifications.
 - q. Remove abandoned wiring and raceway to source of supply.
 - r. Remove exposed abandoned raceway, including abandoned raceway above accessible ceiling finishes. Cut raceway flush with walls and floors, and patch surfaces. Remove all associated clamps, hangers, supports, etc. associated with raceway removal.
 - s. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is removed. Provide blank cover for abandoned outlets that are not removed. Patch openings created from removal of devices to match surrounding finishes.
 - t. Disconnect and remove abandoned panelboards and distribution equipment.
 - u. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
 - v. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories. Provide for proper recycling or disposal of existing lamps and ballasts removed from the site in accordance with EPA and State of Illinois regulations.
 - w. Repair adjacent construction and finishes damaged during demolition and extension work. Patch openings to match existing surrounding finishes.
 - x. Maintain access to existing electrical installations that remain active. Modify the installation or provide an access panel with placard.
 - y. Extend existing installations using materials and methods compatible with existing electrical installations, but not less than specified.
 - z. HID and fluorescent lamps, determined by the Toxicity Characteristic Leachate procedure (TCLP), to be hazardous waste shall be disposed of in a permitted hazardous waste disposal facility or by a permitted lamp recycler.
 - aa. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

- bb. Floor slabs may contain conduit systems. The Contractor is responsible for taking any measures required to ensure no conduits or other services are damaged. This includes X-ray or similar non-destructive means.
- cc. The Contractor is responsible for all costs incurred in repair, relocations, or replacement of any cables, conduits, or other services if damaged without proper investigation.
- dd. Distribution and Branch Panelboards to remain: Clean exposed surfaces and check tightness of electrical connections. Lubricate where required. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION 260501

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Comply with the National Electrical Code, 2014, or latest applicable iteration.
- C. Comply with NECA 1, NECA 101, and referenced UL and NEMA standards.

1.2 SUMMARY

- A. Section Includes:
 - 1. Copper building wire rated 600 V or less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 DEFINITIONS

- A. PV: Photovoltaic.
- B. RoHS: Restriction of Hazardous Substances.
- C. VFC: Variable-frequency controller.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
 - 1. For recycled content, indicating postconsumer and pre-consumer recycled content and cost.
- C. Product Schedule: Indicate type, use, location, and termination locations.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA.
 - 1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

- A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.
- B. Standards:
 - 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
 - 2. RoHS compliant.
 - 3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."
- C. Conductors: Copper, complying with all ASTM standards for bare annealed copper and stranded conductors.
- D. Conductor Insulation:
 - 1. Type THHN-THWN-2: Comply with UL 83.
 - 2. Type XHHW-2: Comply with UL 44, 1581, and 1063.

2.2 CONNECTORS AND SPLICES

- A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
- B. Jacketed Cable Connectors: For steel and aluminum jacketed cables: See MC cable requirements for more information.
- C. Mechanical Lugs.
 - 1. Materials.
 - a. Connectors manufactured from aluminum shall be in compliance with ASTM B108 or B221.
 - b. Connectors manufactured from copper shall be in compliance with ASTM B124, B152, or B301.
 - c. Connectors manufactured from bronze shall be in compliance with ASTM B62, B98, or B505.
 - d. Connectors manufactured from zinc shall be in compliance with ASTM B86.

- e. Aluminum connectors shall be plated with electrotin plating in compliance with ASTM B545 and B571.
 - f. Copper and bronze connector designs requiring protective plating shall be plated with electro-tin plating in compliance with ASTM B-545 and B571 or bright dipped.
 - g. Wire binding screws shall be made with aluminum, steel, silicon bronze or brass. 2.9 Connectors shall be RoHS compliant.
2. Design
- a. Connectors shall be capable of terminating conductors sized from 14 AWG to 1000 kcmil.
 - b. Aluminum connectors shall be dual rated for both copper and aluminum conductors at a minimum of 75-deg C.
 - c. Copper and bronze connectors shall be rated for copper conductors at 90-deg C.
 - d. Connectors shall be range taking; accepting various conductor sizes.
 - e. Wire-way holes shall be sized for easy insertion of all class B/C conductors designed for the connector.
 - f. All wire binding screws shall be designed to withstand 110% of the recommended installation torque.
 - g. Termination: Mechanical compression or crimp: per lug manufacturer specifications.
3. Performance
- a. Connectors used for power applications shall be Listed by Underwriters Laboratories (UL) per UL 486A-486B Standard for Wire Connectors.
 - b. Connectors used for grounding applications shall be Listed by Underwriters Laboratories (UL) per ANSI/UL 467 Standard for Grounding and Bonding Equipment.
 - c. Connectors made from aluminum shall be UL Listed for copper and aluminum conductors.
 - d. Connectors made from copper or bronze shall be UL Listed for solid copper conductors and stranded class B/C copper conductors.
- D. Compression Lugs
1. Material
- a. Copper compression connectors shall be manufactured from high strength seamless copper tubing in compliance with ASTM B75.
 - b. Aluminum compression connectors shall be manufactured from high strength seamless aluminum tubing in compliance with ASTM B609 and pre-filled with De-Ox® oxide inhibiting compound.
 - c. All connectors shall be electro-tin plated in compliance with ASTM B-545-97 and B571-97.
 - d. Connectors shall be RoHS compliant.
2. Design
- a. Copper compression connectors shall be capable of crimping copper conductors sized from 10 AWG to 1000 kcmil class B/C, G, H, I, K, M, and #8 to 1111 DLO.
 - b. Aluminum compression connectors shall be capable of crimping aluminum and copper conductors sized from 8 AWG to 1000 kcmil class B/C.
 - c. All connectors shall be range taking, accepting different conductor sizes.
 - d. All connector ends shall have chamfered barrels for easy conductor insertion.
 - e. All termination lug designs shall have mounting options to accommodate:
 - 1) Standard and narrow tang options
 - 2) Straight, 45-deg bent, or 90-deg bent tang options

- 3) Blank tang and one-hole or two-hole mounting bolt options.
 - 4) Options to accommodate #10, 1/4", 5/16", 3/8", 1/2", or 5/8" mounting bolts.
- f. Copper compression connectors shall be rated for copper solid, stranded and flexible conductors to 90-deg C.
- g. Aluminum compression connectors shall be dual rated for both copper and aluminum conductors to 90-deg C.
- 3. Performance.
 - a. All system connectors shall be Listed by Underwriters Laboratories (UL) per UL 486A-486B Standard for Wire Connectors and per ANSI/UL 467 Standard for Grounding and Bonding Equipment.
 - b. Compression connectors shall be UL Listed for use with industry standard compression tools (such as ILSCO, Milwaukee, Greenlee, Thomas & Betts, Anderson, and Burndy) and, if the compression tool is die-taking, their equivalent application dies.
 - c. Copper compression connectors shall be UL Listed for use with solid copper conductors, stranded class B/C copper conductors, and flex class G, H, I, K, M, and DLO copper conductors.
 - d. Aluminum compression connectors shall be UL Listed for use with solid copper conductors and stranded class B/C copper and aluminum/copper alloy conductors.
- E. Pre-insulated mechanical connectors.
 - 1. Materials.
 - a. Connector bars shall be manufactured from high strength aluminum in compliance with ASTM B221.
 - b. Connector bars shall be plated with electro-tin plating in compliance with ASTM B545 and B571.
 - c. Connector insulation shall be manufactured from high dielectric strength black plastisol to industry requirements.
 - d. Connector safety caps shall be manufactured from PVC.
 - e. All connector ports shall be filled with De-Ox® oxide inhibiting compound.
 - f. Connectors shall be RoHS compliant
 - 2. Design
 - a. Available connectors shall be capable of terminating conductors sized from 14 AWG to 750 kcmil.
 - b. Connectors shall be dual rated for both copper and aluminum conductors at 90-deg C.
 - c. Connectors shall be range taking; accepting various conductor sizes.
 - d. Connectors shall have an insulation rating of 600V.
 - e. All connector wire-way openings shall be provided with removable and pre-installed safety caps.
 - f. All connector screw-way openings shall be provided with removable and pre-installed safety caps.
 - g. Wire-way and screw-way caps shall be color coded for visual indication of conductor types acceptable for use.
 - h. All insulation wire-way openings shall be precision machine trimmed evenly for safety and professional appearance.
 - i. All mechanical wire binding screws shall be designed to withstand 160% of the recommended installation torque.
 - 3. Performance

- a. Connectors shall be Listed by Underwriters Laboratories (UL) per UL 486A-486B Standard for Wire Connectors.
 - b. Connector insulation clarity, texture, and color shall not be affected by prolonged exposure to 150-deg F and 100% humidity.
 - c. Connector insulation shall not fracture after being exposed to -18-deg C and edge dropped from heights of five feet and stressed per ASTM Flex Test.
 - d. Connector insulation shall withstand 10,000 volts per ASTM D149
 - e. Connector insulation shall meet flammability rating per UL 746C with a glow-wire temperature of 750-deg C.
 - f. Connectors shall be UV resistant and have an insulation rating of 600V.
- F. Twist-on Wire Connectors: Splices and taps shall be made with expanding wire spring type wire connectors (i.e. Buchanan B-Cap type, Ideal Wing type, et al), with fire retardant copolymer shell expanding to support tightening of the connection; hexagonal top for nut-driver application; color coded sizes. Fixed, wire spring type (i.e. Ideal 76B, et al) are not acceptable unless provided by the manufacturer for final equipment connections, #18AWG or smaller. Push-in wire connectors are not acceptable except when provided as an OEM accessory (eg, luminaire disconnect) and only then when matched with solid wire.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper; solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid or stranded for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.
- C. VFC Output Circuits Cable: Extra-flexible stranded for all sizes.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Service Entrance: Type XHHW-2, single conductors in raceway.
- B. Exposed Feeders: Type THHN/THWN-2, single conductors in raceway inside the building, Type XHHW-2, single conductors in raceway for all exterior applications.
- C. Exposed or concealed branch Circuits, Including in Crawlspace: Type THHN/THWN-2, single conductors in raceway inside the building, Type XHHW-2, single conductors in raceway for all exterior applications.
- D. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- E. VFC Output Circuits: Type XHHW-2 in metal conduit.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- E. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- F. Complete cable tray systems installation according to Section 260536 "Cable Trays for Electrical Systems" prior to installing conductors and cables.

3.4 CONNECTIONS

- 1) Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- 2) Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
 - a) Use oxide inhibitor in each splice, termination, and tap for exterior locations.
- 3) Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

IDENTIFICATION

- G. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."
- H. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.
- I. All terminal blocks and wire terminals for control wiring shall be properly numbered for identification with listed vinyl stick-on markers or equivalent. Identify fire alarm wiring per NEC 760

3.4 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.5 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections with qualified staff and supervision.
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors and conductors feeding the following critical equipment and services for compliance with requirements:
 - 2. Perform each of the following visual and electrical tests:
 - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
 - b. Test bolted connections for high resistance using one of the following:
 - 1) A low-resistance ohmmeter.
 - 2) Calibrated torque wrench.
 - 3) Thermographic survey.
 - c. Inspect compression-applied connectors for correct cable match and indentation.
 - d. Inspect for correct identification.
 - e. Inspect cable jacket and condition.
 - f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable for a one-minute duration.
 - g. Continuity test on each conductor and cable.
 - h. Uniform resistance of parallel conductors.
 - 3. Initial Infrared Scanning: After Substantial Completion, but before Final Acceptance, perform an infrared scan of the main switchboard and panelboard. Correct deficiencies determined during the scan.
 - a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - b. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

- B. Cables will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports to record the following:
 - 1. Procedures used.
 - 2. Results that comply with requirements.
 - 3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 260523 - CONTROL-VOLTAGE ELECTRICAL POWER CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section applies to any control wiring not associated with systems specified in other sections, such as temperature control, access control, surveillance, burglar alarm, other structured telecommunications cabling, public address system, and the like. Examples might include generator controls, power monitoring communication; network lighting control systems, motor control interlocks, and the like, and may require some or all of the following as stipulated by the manufacturer:
 - 1. UTP cabling.
 - 2. 50/125 and 62.5/125-micrometer, multimode optical fiber cabling as specified by equipment manufacturer.
 - 3. RS-232 cabling.
 - 4. RS-485 cabling.
 - 5. Low-voltage control cabling.
 - 6. Control-circuit conductors.
 - 7. Identification products.

1.3 DEFINITIONS

- A. Basket Cable Tray: A fabricated structure consisting of wire mesh bottom and side rails. See Division 260536.
- B. EMI: Electromagnetic interference.
- C. IDC: Insulation displacement connector.
- D. Ladder Cable Tray: A fabricated structure consisting of two longitudinal side rails connected by individual transverse members (rungs). See Division 260536.
- E. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.

- F. Open Cabling: Passing telecommunications cabling through accessible open spaces (e.g., above lay-in ceilings).
- G. RCDD: Registered Communications Distribution Designer.
- H. Trough or Ventilated Cable Tray: A fabricated structure consisting of integral or separate longitudinal rails and a bottom having openings sufficient for the passage of air and using 75 percent or less of the plan area of the surface to support cables.
- I. UTP: Unshielded twisted pair.

1.4 SUBMITTALS

- A. Product Data: For each type of product required.
- B. Shop Drawings: Where cable tray or cable runway is required for proper execution of the work, provide a cable tray schedule and layout, showing general anticipated cable tray route to scale, with relationship between the tray and adjacent structural, electrical, and mechanical elements. Include the following:
 - 1. Vertical and horizontal offsets and transitions.
 - 2. Clearances for access above and to side of cable trays.
 - 3. Vertical elevation of cable trays above the floor or bottom of ceiling structure.
 - 4. Load calculations to show dead and live loads as not exceeding manufacturer's rating for tray and its support elements.
- C. Qualification Data: For systems to be manufacturer certified, provide qualifications for a qualified layout technician, installation supervisor, and/or field inspector as required for acceptance of the system.
- D. Source quality-control reports.
- E. Field quality-control reports as required for manufacturers' certifications.
- F. Maintenance Data: For wire and cable to include in maintenance manuals as applicable.

1.5 QUALITY ASSURANCE

- A. Testing Qualifications: Currently certified as applicable to the system being installed (such as by a manufacturer or by BICSI) to supervise the installation and on-site testing.
- B. Surface-Burning Characteristics (as applicable): As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.
 - 1. Test optical fiber cable on reels. Use an optical time domain reflectometer to verify the cable length and locate cable defects, splices, and connector; include the loss value of each. Retain test data and include the record in maintenance data.
 - 2. Test each pair of UTP cable for open and short circuits.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install UTP and optical fiber 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.

PART 2 - PRODUCTS

2.1 PATHWAYS

- A. Support of Open Cabling: NRTL labeled for support the applicable cabling, designed to prevent degradation of cable performance and pinch points that could damage cable.
 - 1. In data rooms and cabinets:
 - a. Support brackets with cable tie slots for fastening cable ties to brackets.
 - b. Lacing bars, spools, wide flanged J-hooks, bridle rings with protective bushings, and D-rings.
 - c. Straps and other devices.
 - 2. Above Ceilings:
 - a. Standard 2" bridle rings properly supported by building structure.
 - b. Cable tray: wherever there are more cables than one run of bridle rings will accommodate.
- B. Cable Trays:
 - 1. Cable Tray Materials: Metal, suitable for indoors and protected against corrosion by electroplated zinc galvanizing, complying with ASTM B 633, Type 1, not less than 0.000472 inch (0.012 mm) thick.
 - a. Basket Cable Trays: Minimum 6 inches (150 mm) wide and 2 inches (50 mm) deep, sized to accommodate quantities of cables plus 20%. Wire mesh spacing shall not exceed 2 by 4 inches (50 by 100 mm).
 - b. Ladder Runway Cable Trays: Nominally 12 inches (305 mm) wide, and a rung spacing of 9 inches (230 mm).
 - c. Channel Cable Trays: One-piece construction, nominally 4 inches (100 mm)] wide. Slot spacing shall not exceed 4-1/2 inches (115 mm) o.c.
- C. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems."

1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

2.2 BACKBOARDS

- A. Description: Plywood, fire-retardant treated, 3/4 by 48 by 96 inches (19 by 1220 by 2440 mm). Comply with requirements for plywood backing panels in Division 06 Section "Rough Carpentry."

2.3 UTP CABLE

- A. Description: 100-ohm, four-pair UTP.
 1. Comply with ICEA S-90-661 for mechanical properties.
 2. Comply with TIA/EIA-568-C, Category 6, unless another standard is cited by a system manufacturer.
 3. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:
 - a. Communications, General Purpose: Type CM or CMR.
 - b. Communications Plenum Rated: Type CMP, complying with NFPA 262.
 - c. Communications Riser Rated: Type CMR; complying with UL 1666.
 - d. Communications, Limited Purpose: Type CMX.
 - e. Multipurpose: Type MP or Type MPG.
 - f. Multipurpose, Plenum Rated: Type MPP, complying with NFPA 262.
 - g. Multipurpose, Riser Rated: Type MPR, complying with UL 1666.

2.4 UTP CABLE HARDWARE

- A. UTP Cable Connecting Hardware: IDC type, using modules designed for punch-down caps or tools. Cables shall be terminated with connecting hardware of the same category or higher.
- B. Connecting Blocks: 110 style for Category 6, or as otherwise stipulated or provided by a system manufacturer. Provide blocks for the number of cables terminated on the block, plus 10 percent spare; integral with connector bodies, including plugs and jacks where indicated.

2.5 OPTICAL FIBER CABLE

- A. Description: Multimode, 50/125 or 62.5/125-micrometer per system manufacturer's specifications, multi-fiber, nonconductive, tight buffer, optical fiber cable (fiber count to match application or as indicated).
 1. Comply with ICEA S-83-596 for mechanical properties.
 2. Comply with TIA/EIA-568-B.3 for performance specifications.
 3. Comply with TIA/EIA-492AAAA-B for 50/125 micro-meter cable, or TIA/EIA-492AAAA-A for 62.5/125 micrometer cable for detailed specifications.
 4. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444, UL 1651, and NFPA 70 for the following types:

- a. General Purpose, Nonconductive: Type OFN or OFNG.
- b. Plenum Rated, Nonconductive: Type OFNP, complying with NFPA 262.
- c. Riser Rated, Nonconductive: Type OFNR, complying with UL 1666.
- 5. Maximum Attenuation: 3.0 dB/km at 850 nm; 1.0 dB/km at 1300 nm.
- 6. Minimum Modal Bandwidth: 160 MHz-km at 850 nm; 500 MHz-km at 1300 nm.

B. Jacket:

- 1. Jacket Color: Aqua for 50/125, Orange for 62.5/125-micrometer cable.
- 2. Cable cordage jacket, fiber, unit, and group color shall be according to TIA/EIA-598-B.
- 3. Imprinted with fiber count, fiber type, and aggregate length at regular intervals not to exceed 40 inches (1000 mm).

2.6 OPTICAL FIBER CABLE HARDWARE

A. Cable Connecting Hardware: Comply with the Fiber Optic Connector Intermate-ability Standards (FOCIS) specifications of TIA/EIA-604-2, TIA/EIA-604-3-A, and TIA/EIA-604-12. Comply with TIA/EIA-568-B.3.

- 1. Quick-connect, simplex and duplex, Type LC or Type MT-RJ connectors (verify with Owner's IT staff). Insertion loss not more than 0.75 dB.
- 2. Type SFF connectors may be used in termination racks, panels, and equipment packages with the Owner's permission.

2.7 RS-232 CABLE

A. Standard Cable: NFPA 70, Type CM.

- 1. Paired, two pairs, No. 22 AWG, stranded (7x30) tinned-copper conductors.
- 2. Polypropylene insulation.
- 3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
- 4. PVC jacket.
- 5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned-copper drain wire.
- 6. Flame Resistance: Comply with UL 1581.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

- 1. Paired, two pairs, No. 22 AWG, stranded (7x30) tinned-copper conductors.
- 2. Plastic insulation.
- 3. Individual aluminum foil-polyester tape shielded pairs with 100 percent shield coverage.
- 4. Plastic jacket.
- 5. Pairs are cabled on common axis with No. 24 AWG, stranded (7x32) tinned-copper drain wire.
- 6. Flame Resistance: Comply with NFPA 262.

2.8 RS-485 CABLE

A. Standard Cable: NFPA 70, Type CM or Type CMG.

1. Paired, two pairs, twisted, No. 22 AWG, stranded (7x30) tinned-copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1581.

B. Plenum-Rated Cable: NFPA 70, Type CMP.

1. Paired, two pairs, No. 22 AWG, stranded (7x30) tinned-copper conductors.
2. Fluorinated ethylene propylene insulation.
3. Unshielded.
4. Fluorinated ethylene propylene jacket.
5. Flame Resistance: NFPA 262, Flame Test.

2.9 LOW-VOLTAGE MULTI-CONDUCTOR CABLE

A. Paired Cable: NFPA 70, Type CMG.

1. Multiple conductors, sized per system requirements, twisted or untwisted as required.
2. PVC insulation.
3. Unshielded or shielded as required.
4. PVC jacket.
5. Flame Resistance: Comply with UL 1581.

B. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.

1. Multiple conductors, sized per system requirements, twisted or untwisted as required.
2. PVC insulation.
3. Unshielded or shielded as required
4. FEP Teflon jacket.
5. Flame Resistance: Comply with NFPA 262.

2.10 CONTROL-CIRCUIT CONDUCTORS

- A. Class 1 Control Circuits: Minimum #14 Stranded copper, Type THHN-THWN, in raceway, complying with UL 83.
- B. Class 2 Control Circuits: Minimum #16 Stranded copper, Type THHN-THWN, in raceway complying with UL 83.
- C. Class 3 Remote-Control and Signal Circuits: Minimum #14 Stranded copper, Type THHN or Type TFFN, complying with UL 83.

2.11 IDENTIFICATION PRODUCTS

- A. Comply with UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.
- B. Comply with requirements in Division 26 Section "Identification for Electrical Systems."

2.12 SOURCE QUALITY CONTROL

- A. Testing Agency: Engage a manufacturer's authorized technician to evaluate cables.
- B. Factory test UTP and optical fiber cables on reels according to TIA/EIA-568-B.1.
- C. Factory test UTP cables according to TIA/EIA-568-B.2.
- D. Factory test multimode optical fiber cables according to TIA/EIA-526-14-A and TIA/EIA-568-B.3.
- E. Cable will be considered defective if it does not pass tests and inspections.
- F. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 INSTALLATION OF PATHWAYS

- A. Cable Trays: Comply with NEMA VE 2 and TIA/EIA-569-A-7.
- B. Comply with TIA/EIA-569-A and NFPA 70 for pull-box sizing and length of conduit and number of bends between pull points.
- C. Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems" for installation of conduits and wireways.
- D. Install manufactured conduit sweeps and long-radius elbows if possible.
- E. Pathway Installation in Equipment Rooms:
 - 1. Position conduit ends adjacent to a corner on backboard if a single piece of plywood is installed or in the corner of room if multiple sheets of plywood are installed around perimeter walls of room.
 - 2. Install cable trays to route cables if conduits cannot be located in these positions.
 - 3. Secure conduits to backboard if entering room from overhead.
 - 4. Extend conduits 3 inches (75 mm) above finished floor.
 - 5. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.
- F. Backboards: Install backboards with 96-inch (2440-mm) dimension vertical. Butt adjacent sheets tightly and form smooth gap-free corners and joints.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

A. Comply with NECA 1.

B. General Requirements for Cabling:

1. Comply with TIA/EIA-568-B.1.
2. Comply with NFPA 70.
3. Comply with applicable NECA/NEIS workmanship standards.
4. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
5. Terminate all conductors; no cable shall contain unterminated elements unless directed to leave unterminated slack for future termination by others. Make terminations only at indicated outlets, terminals, and cross-connect and patch panels.
6. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
8. 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.
9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
10. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable" and manufacturer's specifications for maximum pulling tension. Monitor cable pull tensions during installation.
11. Cable shall not be supported solely by structural members or in contact with pipes, ducts, or any potentially damaging items.

C. UTP Cable Installation:

1. Comply with TIA/EIA-568-B.2.
2. Install 110-style IDC termination hardware unless otherwise indicated.
3. Do not untwist UTP cables more than 1/2 inch (12 mm) from the point of termination to maintain cable geometry.

D. Installation of Control-Circuit Conductors:

1. Install wiring in raceways. Comply with requirements specified in Division 26 Section "Raceway and Boxes for Electrical Systems."

E. Optical Fiber Cable Installation:

1. Comply with TIA/EIA-568-B.3.
2. Cable shall be terminated on connecting hardware that is rack or cabinet mounted.

F. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.

2. Cable must be in raceway or cable tray in rooms with open structure (no ceilings). Provide raceways and outlet boxes for all cable installed inside walls, except where cable is fished into existing partitions.
3. Suspend copper cable not in a raceway, wireway, or similar pathway a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches (1525 mm) apart.
4. Cable shall not be supported solely by structural members or in contact with pipes, ducts, or any potentially damaging items.

G. Separation from EMI Sources:

1. Comply with BICSI TDMM and TIA/EIA-569-A recommendations for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
2. Separation between open communications cables and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches (127 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (305 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (600 mm).
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 (64 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (305 mm).
4. Separation between communications cables in grounded metallic raceways and 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 (75 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
5. Separation between Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches (1200 mm).
6. Separation between Cables and Fluorescent Fixtures: A minimum of 12 inches (305mm).

3.3 FIRESTOPPING

- A. Comply with requirements in Division 07 Section "Penetration Firestopping."
- B. Comply with TIA/EIA-569-A, Annex A, "Firestopping."
- C. Comply with BICSI TDMM, "Firestopping Systems" Article.

3.4 GROUNDING

- A. For data communication wiring, comply with ANSI-J-STD-607-A and with BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.
- B. For low-voltage wiring and cabling, comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems."

3.5 IDENTIFICATION

- A. Identify system components, wiring, and cabling according to TIA/EIA-606-A. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a factory authorized technician to perform tests and inspections for factory warranted systems. For non-factory warranted system, contractor shall perform tests and inspections.
- B. Tests and Inspections:
 - 1. Visually inspect UTP and optical fiber cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding for pin assignments and inspect cabling connections to confirm compliance with TIA/EIA-568-B.1.
 - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 - 3. Test UTP 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 after cross connection.
 - a. Test instruments shall meet or exceed applicable requirements in TIA/EIA-568-B.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.
 - 4. Optical Fiber Cable Tests:

- a. Test instruments shall meet or exceed applicable requirements in TIA/EIA-568-B.1. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.
- b. Link End-to-End Attenuation Tests:
 - 1) Multimode Link Measurements: Test at 850 or 1300 nm in one direction according to TIA/EIA-526-14-A, Method B, One Reference Jumper.
 - 2) Attenuation test results for links shall be less than 2.0 dB. Attenuation test results shall be less than that calculated according to equation in TIA/EIA-568-B.1.
- C. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide or transfer the data from the instrument to the computer, save as text files, print, and submit.
- D. End-to-end cabling will be considered defective if it does not pass tests and inspections. Replace defective elements and retest.
- E. Prepare test and inspection reports.

END OF SECTION 260523

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Support, anchorage, and attachment components.
2. Fabricated metal equipment support assemblies.

B. Related Requirements (E.C. to verify):

1. Section 260500 "Supplemental Requirements for Electrical" for additional abbreviations, definitions, submittals, qualifications, testing agencies, and other Project requirements applicable to Work specified in this Section.
2. Section 260011 "Facility Performance Requirements for Electrical" for seismic-load, wind-load, acoustical, and other field conditions applicable to Work specified in this Section.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Include construction details, material descriptions, dimensions of individual components and profiles of products intended to be used:
 - a. Slotted support systems, hardware, and accessories.
 - b. Clamps.
 - c. Hangers.
 - d. Eye nuts, S-hooks, threaded fasteners, and the like.
 - e. Anchors.
 - f. Brackets.
2. Include rated capacities and furnished specialties and accessories.

B. Shop Drawings: Signed and sealed by a qualified professional engineer. For fabrication and installation details for seismic rated electrical hangers and support systems.

1. Hangers. Include product data for components.
2. Slotted support systems.
3. Equipment supports.

4. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.
- C. Delegated Design Submittals:
1. Include design calculations for seismic restraints.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. E.C. shall consult with the Owner's structural professional engineer for questions regarding hangers and support systems.
- 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 Rating: Class 1.
 2. Self-extinguishing according to ASTM D635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32 inch (10 mm) diameter holes at a maximum of 8 inch (200 mm) on center in at least one surface.
1. Standard Material for Channel, Fittings, and Accessories: Green painted cold rolled steel, galvanized finish for exterior or damp interior locations..
 2. Standard Channel Width: Selected for applicable load criteria, 1-5/8 inch (41.25 mm).
 - a. Metallic Coatings: Exterior locations: Hot-dip galvanized after fabrication and applied according to MFMA-4. Interior damp or wet: galvanized plated or green gold.
 - b. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
- B. Conduit and Cable Support Devices: Stamped Steel, malleable-iron, Stainless steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs must have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body must be made of malleable iron.
- D. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated or stainless steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
4. Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element.
5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 (Grade A325M).
6. Toggle Bolts: All steel springhead type.
7. Hanger Rods: Threaded steel.

PART 3 - EXECUTION

3.1 SELECTION

- A. Comply with the following standards for selection and installation of hangers and supports, except where requirements on Drawings or in this Section are stricter:
 1. NECA NEIS 101, *Installing Steel Conduits (Rigid, IMC, EMT)*.
 2. NECA NEIS 105.
- B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for raceways specified in Section 260533.13 "Conduits for Electrical Systems."
- D. Comply with requirements for boxes specified in Section 260533.16 "Boxes and Covers for Electrical Systems."
- E. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and ERM as scheduled in NECA NEIS 1, where its Table 1 lists maximum spacings that are less than those stated in NFPA 70. Minimum rod size must be 1/4 inch (6 mm) in diameter.
- F. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system.
- G. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2 inch (38 mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings, and for fastening raceways to trapeze supports.

3.2 INSTALLATION OF SUPPORTS

- A. Comply with NECA NEIS 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: Raceways and cables may not be solely supported by openings through structure members, between such structures and roof channels, or on top of other piping systems and ducts.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination must be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts, expansion anchors, or concrete screws on hollow masonry units and expansion anchor fasteners or concrete screws on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners or concrete screws.
 - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inch (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inch (100 mm) thick.
 - 6. To Steel: listed Beam clamps or Spring-tension clamps.
 - 7. To Light Steel: Sheet metal screws or Spring-tension clamps.
 - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars.

3.3 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated, but not less than 4 inch (100 mm) larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use 3000 psi (20.7 MPa), 28-day compressive-strength concrete. Comply with Section 033000 "Cast-in-Place Concrete."
- C. Anchor equipment to concrete base as follows:
 - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

2. Install anchor bolts to elevations required for proper attachment to supported equipment.
3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

3.4 PAINTING

A. Touchup:

1. Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - a. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
2. For special coatings, comply with requirements in Section 099113 "Exterior Painting", Section 099123 "Interior Painting", or Section 099600 "High-Performance Coatings" as applicable for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.

- #### B. Galvanized Surfaces:
- Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

END OF SECTION 260529

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. State of Illinois School Codes

1.2 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. RGS: Rigid Galvanized Steel conduit (also referred to as "Heavy Wall", "Rigid," or "Rigid Steel Conduit."
- C. FMC: Flexible metal conduit.
- D. IMC: Intermediate metal conduit.
- E. LFMC: Liquidtight flexible metal conduit.
- F. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For the following raceway components. Include plans, elevations, sections, details, and attachments to other work:
 - 1. Custom enclosures and cabinets.
 - 2. For handholes and boxes for underground wiring, including the following:

- a. Duct entry provisions, including locations and duct sizes.
 - b. Frame and cover design.
 - c. Grounding details.
 - d. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons (when applicable).
 - e. Joint details.
- C. As-Built Drawings: Conduit routing plans, drawn to scale, on which all work performed is shown.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Rigid Steel Conduit: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. FMC: Zinc-coated steel (or aluminum for sizes up to 1”).
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Fittings for EMT: Steel or die-cast, set-screw or compression types (compression in plenum ceilings).
- G. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity when the raceway is intended for use as an equipment bonding conductor.

2.2 NONMETALLIC CONDUIT AND TUBING

- A. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- B. Fittings for RNC: NEMA TC 3; match to conduit or tubing type and material.

2.3 OPTICAL FIBER/COMMUNICATIONS CABLE RACEWAY AND FITTINGS

- A. Description: Comply with UL 2024; flexible type, approved for plenum, riser, or general-use installation as dictated by site conditions.

2.4 METAL WIREWAYS

- A. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- B. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- C. Wireway Covers: Hinged or set-screw type.
- D. Finish: Manufacturer's standard enamel finish.

2.5 SURFACE RACEWAYS

- A. Surface Metal Raceways in dry finished or unfinished locations: Galvanized steel with snap-on covers. Manufacturer's standard white or light almond enamel finish.
- B. Surface Raceways in unfinished damp locations: Galvanized steel or non-metallic with screw covers and grounding/bonding as required.

2.6 BOXES, ENCLOSURES, AND CABINETS

2.7 Sheet Metal Outlet and Device Boxes: NEMA OS 1 (In plenum ceilings, approved for use and manufactured for the purpose).

- A. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy or aluminum, Type FD, with gasketed cover in exposed exterior locations. Die cast zinc/aluminum-type boxes permitted in the existing utility tunnels and new elevator hoistways.
- B. Metal Floor Boxes: Cast or sheet metal, fully adjustable, rectangular concealed access type unless otherwise indicated.
- C. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- D. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum with gasketed cover.
- E. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with vault-type latch, unless otherwise indicated.
 - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
 - 2. Flush type where indicated, with flush locking latch.

F. Cabinets:

1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush or vault-type latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.

2.8 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. Description: Cast or Pre-cast Handholes and Boxes. Comply with SCTE 77.

1. Configuration: Units shall be designed for flush burial and have open bottom, unless otherwise indicated and French drain to manufacturer's specifications.
2. Cover: Cast ferrous metal having structural load rating consistent with enclosure.
3. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
4. Cover Legend: Standard cast lettering as required by NFPA 70 ("Lighting", "Electric", "Telephone", and the like).
5. Cast Handholes: 36 inches wide by 48 inches long and larger shall have inserts for cable racks and pulling-in irons installed before concrete is poured.

B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel or fiberglass or a combination of the two.

1. Configuration: Units shall be designed for flush burial and have open bottom, unless otherwise indicated and French drain to manufacturer's specifications.
2. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
3. Cover Legend: Molded lettering as required by NFPA 70 ("Lighting", "Electric", "Telephone", and the like).

2.9 SLEEVES AND SEALS.

A. See Division 26 "Sleeves and Seals for Electrical" And Division 07 "Firestopping."

PART 3 - EXECUTION

3.1 COORDINATION

A. Prior to commencement of work, verify all existing conditions and resolve conflicts that may impede the progress of the work including but not limited to:

1. Preplan all conduit routing and floor penetrations and provide sketches and plans as necessary for field coordination.
2. Verify structural members that may conflict with the work.
3. Verify HVAC and plumbing items and architectural features in the paths of anticipated conduit groups.
4. Consider equipment hoisting and anchorage provisions.

3.2 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Service Entrance Conduit: Rigid Steel or encased RNC below grade.
2. Exposed Conduit: Rigid steel conduit or IMC.
3. Concealed Conduit, Aboveground: Rigid steel conduit, IMC, or EMT (as permitted by its listing).
4. Underground Conduit: Rigid Steel conduit direct buried, or RNC, Schedule 40, direct buried or encased below roadways, with steel elbow sweeps on long pulls and changed entirely to rigid steel prior to exiting the ground as required by NEC.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
6. Boxes and Enclosures, Aboveground: NEMA 250, minimum, Type 3R (unless otherwise indicated or inferred), Nema 4 in hose-down areas.
7. Application of Handholes and Boxes for Underground Wiring:
 - a. Handholes and Pull Boxes in Access Roads, Driveways, and Parking Lot where subject to deliberate loading by vehicles: cast-in-place or precast concrete, SCTE 77, Tier 15 structural load rating with cast iron covers.
 - b. Handholes and Pull Boxes in Sidewalks, Parkways, Traffic Islands and Similar Off-Roadway Locations, Subject to Occasional, Nondeliberate Loading by Heavy Vehicles with a Safety Factor for Nondeliberate Loading by Vehicles: Polymer-concrete units, SCTE 77, Tier 8 structural load rating, with manufacturer's heavy duty cover.
 - c. Handholes and Pull Boxes Not Subject to any Traffic (other than lawn maintenance and snow accumulation): Polymer-concrete units, SCTE 77, Tier 8 structural load rating, with manufacturer's standard duty cover.

B. Comply with the following indoor applications, unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT in unfinished areas, surface raceway in finished areas.
2. Interior Exposed and Subject to Severe Physical Damage: Rigid steel conduit or IMC. Includes raceways in the following locations:
 - a. Loading docks and other rooms or corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
4. Fished into building voids: MC cable or FMC.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Interior Locations: Rigid steel conduit or IMC.
7. Exposed, subject to corrosive atmospheres: RNC.
8. Raceways for Optical Fiber or Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical fiber/communications cable raceway.
9. Raceways for Optical Fiber or Communications Cable Risers in Vertical Shafts: Riser-type, optical fiber/communications cable raceway.
10. Raceways for Concealed General-Purpose Distribution of Optical Fiber or Communications Cable: Plenum-type, optical fiber/communications cable raceway or EMT with general purpose cable raceway.

- 11. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, in damp or wet locations.
- C. Minimum Raceway Size: 1/2-inch (16-mm) trade size for branch power circuits, 3/4-inch for telecom and other low voltage systems; minimum 3/4-inch for all where below grade or embedded in topping.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
 - 1. Rigid and Intermediate Steel Conduit: Use galvanized threaded rigid steel conduit fittings or compression-type threadless fittings, unless otherwise indicated.
 - 2. Fittings for EMT: Steel or die cast, set-screw or compression (compression type in plenum ceilings).

3.3 INSTALLATION

- A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
- B. Coordinate with the precast concrete manufacturer for interior outlets indicated on the plan to be installed flush at the factory.
- C. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- D. Complete raceway installation before starting conductor installation.
- E. Support raceways as specified in Division 26 Sections "Hangers and Supports for Electrical Systems."
- F. Arrange stub-ups so curved portions of bends are not visible above the finished slab.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.
- H. Raceways Embedded in Slabs:
 - 1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. When at right angles to reinforcement, place conduit close to slab support.
 - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
 - 3. Change from RNC to rigid steel conduit or IMC before rising above the floor, including the elbow.
 - 4. Replace bushings damaged by pulling lines.
 - 5. Provide bushings to all conduits exiting the slab that do not otherwise terminate in an enclosure, such as at telephone backboards.
 - 6. Identify empty stub-ups provided for systems installed by others.
- I. Raceways below slabs: Install raceways a minimum of 6" below top of sub-grade; do not lay raceways on top of sub-grade where it may come in contact with either the moisture barrier or the concrete slab. See section 3.4 below for additional information.

- J. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- K. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
- L. Install pull wires in all empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.
- M. Raceways for Optical Fiber and Communications Cable:
 - 1. Install with a maximum distance and number of degree bends allowed for anticipated pulling tension. Comply with BICSI and NECA/NEIS standards for pulling techniques. Add pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.
- N. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:
 - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
 - 2. Where otherwise required by NFPA 70.
- O. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi-recessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
 - 1. Use LFMC in damp or wet locations.
- P. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.
- Q. Set metal floor boxes level and flush with finished floor surface.

3.4 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
 - 1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 31 Section "Earth Moving" for pipe less than 6 inches (150 mm) in nominal diameter.
 - 2. Install backfill as specified in Division 31 Section "Earth Moving."
 - 3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."

4. For RNC, in addition to requirements indicated above, install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete.
 - b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
5. Warning Tape: See Division 26 Section 260553.

3.5 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch (12.5-mm) sieve to No. 4 (4.75-mm) sieve and compacted to same density as adjacent undisturbed earth. Extend drain below frost line.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch (25 mm) above finished grade.
- D. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as specified above and as indicated. Select arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in the enclosure.

3.6 SLEEVE AND SLEEVE SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping" and Division 26 Section "Sleeves and Seals for Electrical Installations."

3.7 PROTECTION

- A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.
 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 2. Repair damage to paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

EAST AURORA SCHOOL DISTRICT #131
FIRE PANEL REPLACEMENT
AT ROLLINS ELEMENTARY SCHOOL
950 KANE ST, AURORA, ILLINOIS 60505
CCA PROJECT NUMBER: 24-1056

CORDOGAN CLARK & ASSOCIATES, INC.
960 RIDGEWAY AVENUE
AURORA, ILLINOIS 60506
630-896-4678
JANUARY 14, 2025

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

1. Color and legend requirements for raceways, conductors, and warning labels and signs.
2. Labels.
3. Bands and tubes.
4. Tapes and stencils.
5. Tags.
6. Signs.
7. Cable ties.
8. Paint for identification.
9. Fasteners for labels and signs.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.
- C. Delegated-Design Submittal: For arc-flash hazard study.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with ASME A13.1.

- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Comply with NFPA 70E and Section 260573.19 "Arc-Flash Hazard Analysis" requirements for arc-flash warning labels.
- F. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.
- G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surface.

2.2 COLOR AND LEGEND REQUIREMENTS

- A. Raceways and Cables Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage and system or service type.
- B. Color-Coding for Phase and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service, feeder, and branch-circuit conductors.
 - 1. Color shall be factory applied or field applied for sizes larger than No. 4 AWG if authorities having jurisdiction permit.
 - 2. Colors for 208/120-V Circuits:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Phase C: Blue.
 - 3. Colors for 240-V single phase circuits:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - 4. Colors for 480/277-V Circuits:
 - a. Phase A: Brown.
 - b. Phase B: Orange.
 - c. Phase C: Yellow.
 - 5. Color for Neutral: White or gray, or white or gray with stripe(s) representing associated phase(s).
 - 6. Color for Equipment Grounds: Bare copper, Green, Green with a yellow stripe.
 - 7. Colors for Isolated Grounds: Green with two or more yellow stripes.

- C. Warning Label Colors:
 - 1. Identify system voltage with black letters on an orange background.
 - 2. Black letters on a white or yellow field for informational or warning signage respectively.
- D. Warning labels and signs shall include, but are not limited to, the following legends:
 - 1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
 - 2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."
- E. Equipment Identification Labels:
 - 1. Black letters on a white field.
 - 2. See NEC-110 for list of equipment to be labeled.

2.3 LABELS

- A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.
- B. Self-Adhesive Wraparound Labels: Preprinted or Write-on, 3-mil- (0.08-mm-) thick, polyester or vinyl flexible label with acrylic pressure-sensitive adhesive.
 - 1. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.
 - 2. Marker for Labels: Permanent, waterproof, black ink marker recommended by tag manufacturer, OR...
 - 3. Marker for Labels: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.
- C. Self-Adhesive Labels: Polyester or Vinyl, thermal, transfer-printed, 3-mil- (0.08-mm-) thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Emedco.
 - c. HellermannTyton.
 - d. Ideal Industries, Inc.
 - e. Panduit Corp.
 - 2. Minimum Nominal Size:
 - a. 1-1/2 by 6 inches (37 by 150 mm) for raceway and conductors.

- b. 3-1/2 by 5 inches (76 by 127 mm) for equipment.
- c. As required by authorities having jurisdiction.

2.4 BANDS AND TUBES

- A. Snap-around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inches (50 mm) long, with diameters sized to suit diameter and that stay in place by gripping action.
- B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameters of and shrunk to fit firmly around item being identified. Full shrink recovery occurs at a maximum of 200 deg F (93 deg C). Comply with UL 224.

2.5 TAPES AND STENCILS

- A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide; compounded for outdoor use.
- C. Tape and Stencil: 4-inch- (100-mm-) wide black stripes on 10-inch (250-mm) centers placed diagonally over orange background and is 12 inches (300 mm) wide. Stop stripes at legends.
- D. Floor Marking Tape: 2-inch- (50-mm-) wide, 5-mil (0.125-mm) pressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Carlton Industries, LP.
 - b. Seton Identification Products; a Brady Corporation company.
- E. Underground-Line Warning Tape:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Brady Corporation.
 - b. Ideal Industries, Inc.
 - c. Seton Identification Products; a Brady Corporation company.
 - 2. Tape:
 - a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
 - b. Printing on tape shall be permanent and shall not be damaged by burial operations.

- c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- 3. Color and Printing:
 - a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.
 - b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".
 - c. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE".

2.6 TAGS

- A. Write-on Tags:
 - 1. Polyester Tags: Minimum 0.010 inch (0.25 mm) thick, with corrosion-resistant grommet and cable tie for attachment.
 - 2. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer, OR...
 - 3. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.7 SIGNS

- A. Baked-Enamel Signs:
 - 1. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.
 - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
 - 3. Nominal Size: 7 by 10 inches (180 by 250 mm).
- B. Metal-Backed Butyrate Signs:
 - 1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs, with 0.0396-inch (1-mm) galvanized-steel backing, punched and drilled for fasteners, and with colors, legend, and size required for application.
 - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
 - 3. Nominal Size: 10 by 14 inches (250 by 360 mm).
- C. Laminated Acrylic or Melamine Plastic Signs:
 - 1. Engraved legend.
 - 2. Thickness:
 - a. For signs up to 20 sq. in. (129 sq. cm), minimum 1/16 inch (1.6 mm) thick.
 - b. For signs larger than 20 sq. in. (129 sq. cm), 1/8 inch (3.2 mm) thick.
 - c. Engraved legend with black letters on white face.

- d. Punched or drilled for mechanical fasteners with 1/4-inch (6.4-mm) grommets in corners for mounting.
- e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.8 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
 - 1. Minimum Width: 3/16 inch (5 mm).
 - 2. Tensile Strength at 73 Deg F (23 Deg C) according to ASTM D638: 12,000 psi (82.7 MPa).
 - 3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
 - 4. Color: Black, except where used for color-coding.
- B. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.
 - 1. Minimum Width: 3/16 inch (5 mm).
 - 2. Tensile Strength at 73 Deg F (23 Deg C) according to ASTM D638: 7000 psi (48.2 MPa).
 - 3. UL 94 Flame Rating: 94V-0.
 - 4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
 - 5. Color: Black.

2.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.
- B. Install identifying devices before installing acoustical ceilings and similar concealment.
- C. Verify identity of each item before installing identification products.
- D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

- E. Apply identification devices to surfaces that require finish after completing finish work.
- F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.
- G. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.
- H. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.
 - 1. Secure tight to surface of conductor, cable, or raceway.
- I. System Identification for Raceways and Cables over 600 V: Identification shall completely encircle cable or conduit. Place adjacent identification of two-color markings in contact, side by side.
 - 1. Secure tight to surface of conductor, cable, or raceway.
- J. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- K. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch- (10-mm-) high letters for emergency instructions at equipment used for power transfer or load shedding.
- L. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- M. Accessible Fittings for Raceways: Identify the covers of each junction and pull box of the following systems with the wiring system legend and system voltage. System legends shall be as follows:
 - 1. "EMERGENCY POWER."
 - 2. "POWER."
 - 3. "UPS."
- N. Vinyl Wraparound Labels:
 - 1. Secure tight to surface at a location with high visibility and accessibility.
 - 2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.
- O. Self-Adhesive Wraparound Labels: Secure tight to surface of raceway or cable at a location with high visibility and accessibility.
- P. Self-Adhesive Labels:
 - 1. On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
- Q. Snap-around Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.
- R. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.
- S. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.
- T. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.
1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.
- U. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.
- V. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.
- W. Underground Line Warning Tape:
1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches (150 to 200 mm) below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches (400 mm) overall.
 2. Install underground-line warning tape for direct-buried cables and cables in raceways.
- X. Write-on Tags:
1. Place in a location with high visibility and accessibility.
 2. Secure using general-purpose or plenum-rated cable ties as applicable.
- Y. Baked-Enamel Signs:
1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
 2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on minimum 1-1/2-inch- (38-mm-) high sign; where two lines of text are required, use signs minimum 2 inches (50 mm) high.
- Z. Metal-Backed Butyrate Signs:
1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on minimum 1-1/2-inch- (38-mm-) high sign; where two lines of text are required, use signs minimum 2 inches (50 mm) high.

AA. Laminated Acrylic or Melamine Plastic Signs:

1. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
2. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on minimum 1-1/2-inch- (38-mm-) high sign; where two lines of text are required, use signs minimum 2 inches (50 mm) high.

BB. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.2 IDENTIFICATION SCHEDULE

- A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.
- B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.
- C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits, More Than 30 A and 120 V to Ground: Identify with self-adhesive raceway labels.
 1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- D. Accessible Fittings for Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive labels containing the wiring system legend and system voltage. System legends shall be as follows:
 1. "EMERGENCY POWER."
 2. "POWER."
 3. "UPS."
- E. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use write-on tags or self-adhesive wraparound labels with the conductor or cable designation, origin, and destination.
- F. Control-Circuit Conductor Termination Identification: For identification at terminations, provide heat-shrink preprinted tubes with the conductor designation.
- G. Conductors to Be Extended in the Future: Attach write-on tags to conductors.

- H. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.
- I. Workspace Indication: Apply floor marking tape or tape and stencil to finished surfaces. Show working clearances in the direction of access to live parts. Workspace shall comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- J. Instructional Signs: Self-adhesive labels, including the color code for grounded and ungrounded conductors.
- K. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive equipment labels or Baked-enamel warning signs.
 - 1. Apply to exterior of door, cover, or other access.
 - 2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:
 - a. Power-transfer switches.
 - b. Controls with external control power connections.
- L. Arc Flash Warning Labeling: Self-adhesive labels.
- M. Operating Instruction Signs: Manufacturer's standard Self-adhesive labels, Baked-enamel warning signs, or laminated acrylic or melamine plastic signs.
- N. Equipment Identification Labels:
 - 1. Indoor Equipment: Laminated acrylic or melamine plastic sign.
 - 2. Outdoor Equipment: Stenciled legend 4 inches (100 mm) high.

END OF SECTION 260553

SECTION 280500 - COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 and 26 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Electronic safety and security equipment coordination and installation.
 - 2. Common electronic safety and security installation requirements.

1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

1.4 SUBMITTALS

- A. All submittals to be submitted electronically in PDF format.

1.5 COORDINATION

- A. Coordinate arrangement, mounting, and support of electronic safety and security equipment:
 - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 - 3. To allow right of way for piping and conduit installed at required slope.
 - 4. To connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.

- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electronic safety and security items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08 Section "Access Doors and Frames."
- D. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

PART 2 - EXECUTION

2.1 COMMON REQUIREMENTS FOR ELECTRONIC SAFETY AND SECURITY INSTALLATION

- A. Comply with NECA 1, and NECA 305 for fire alarm systems.
- B. Confer with manufacturer for existing equipment capabilities and enhancements needed for the proposed work, and with the AHJ for final compliance requirements.
- C. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- D. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- E. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electronic safety and security equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

2.2 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electronic safety and security installations to restore original fire-resistance rating of assembly.

END OF SECTION 280500

SECTION 280513 - CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 and 26 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Fire alarm wire and cable.
 - 2. Cabling for other similar systems when not covered elsewhere.
 - 3. Identification products.

1.3 DEFINITIONS

- A. BICSI: Building Industry Consulting Service International.
- B. EMI: Electromagnetic interference.
- C. IDC: Insulation displacement connector.
- D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.
- E. Open Cabling: Passing telecommunications cabling through open space (e.g., between the studs of a wall cavity).
- F. RCDD: Registered Communications Distribution Designer.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. All submittals to be submitted electronically in PDF format.
- C. Source quality-control reports.

- D. Field quality-control reports.
- E. Maintenance Data: For wire and cable to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency. Coordinate with local codes and standards.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Test cables upon receipt at Project site.

PART 2 - PRODUCTS

2.1 PATHWAYS

- A. Support of Approved Open Cabling Methods (verify with AHJ): NRTL labeled for support of category/class cabling required by the system manufacturer, designed to prevent degradation of cable performance and pinch points that could damage cable. Fire Alarm wiring shall not be comingled with wiring of other systems except as permitted by NEC.
 - 1. Support brackets with cable tie slots for fastening cable ties to brackets.
 - 2. Lacing bars, spools, J-hooks, and D-rings.
 - 3. Straps and other devices.
- B. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems."
 - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep, sized to accommodate the intended device and trim cover.
 - 2. All exposed outlet boxes and associated raceways and fittings for fire alarm cabling shall have a factory applied red finish.

2.2 LOW-VOLTAGE CONTROL CABLE

- A. Install UL listed size and type cable as specified by system or product manufacturer and rated for the environment into which it is installed.
- B. Where no specific cables are specified, choose from the following:
 - 1. Paired Lock Cable: NFPA 70, Type CMG.
 - a. 1 pair, twisted, No. 18 AWG, stranded (19x30) tinned copper conductors.

- b. PVC insulation.
- c. Unshielded.
- d. PVC jacket.
- e. Flame Resistance: Comply with UL 1581.
- 2. Plenum-Rated, Paired Lock Cable: NFPA 70, Type CMP.
 - a. 1 pair, twisted, No. 18 AWG, stranded (19x30) tinned copper conductors.
 - b. Fluorinated ethylene propylene insulation.
 - c. Unshielded.
 - d. Plastic jacket.
 - e. Flame Resistance: NFPA 262, Flame Test.

2.3 CONTROL-CIRCUIT CONDUCTORS

- A. Class 1 Control Circuits: Stranded copper, Type THHN-THWN, in raceway complying with UL 83. Comply with NFPA 70-725.
- B. Class 2 Control Circuits: Stranded copper, Type THHN-THWN in raceway, or power-limited cable (when acceptable to the AHJ), or power limited tray cable in cable tray, concealed in building finishes complying with UL 83. Comply with NFPA 70-725.
- C. Class 3 Remote-Control and Signal Circuits: Stranded copper, Type TW or TF, complying with UL 83. Comply with NFPA 70-725.

2.4 FIRE ALARM WIRE AND CABLE

- A. General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760. All fire alarm multi-conductor cables shall have an industry standard red jack or casing.
- B. Signaling Line Circuits: Match existing EST requirements (#18-#12, 100 ohm maximum, 0.5 microfarad maximum, maximum 125 detectors, 125 single address modules)
 - 1. Circuit Integrity Cable: NFPA 70, Article 760, Classification CI, for power-limited fire alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a 2-hour rating.
- C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation.
 - 1. Low-Voltage Circuits: No. 16 AWG, minimum.
 - 2. Line-Voltage Circuits: No. 12 AWG, minimum.
- D. See Division 284700 for additional requirements.

2.5 IDENTIFICATION PRODUCTS

- A. Comply with UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

- B. Comply with requirements in Division 26 Section "Identification for Electrical Systems."

PART 3 - EXECUTION

3.1 INSTALLATION OF PATHWAYS

- A. Comply with TIA/EIA-569-C and NFPA 70 for pull-box sizing and length of conduit and number of bends between pull points.
- B. Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems." for installation of conduits and wireways.
- C. Install manufactured conduit sweeps and long-radius elbows whenever possible.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

- A. Comply with NECA 1 generally and NECA 305 for fire alarm systems.
- B. General Requirements for Cabling:
 - 1. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
 - 2. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, and cross-connect and patch panels.
 - 3. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 - 4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii.
 - 5. 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.
 - 6. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." 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 copper cable not enclosed in raceway, wireway, or laid in cable tray a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches (1525 mm) apart.
 - 3. Open wiring shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items, and shall not be laid on ceiling tiles and tees of acoustical tile ceilings.
 - 4. Fire alarm wiring routed via open methods must maintain a minimum 2" separation with cabling of other systems. Fire alarm cable may not be bundled with or share raceway with wiring of other systems. See Part 3.3 for more information.
- D. Separation from EMI Sources:

1. 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 (127 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches (300 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches (600 mm).
2. 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 (64 mm).
 - b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches (150 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches (300 mm).
3. Separation between communications cables in grounded metallic raceways and 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 (75 mm).
 - c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches (150 mm).
4. Separation between Cables and Electrical Motors and Transformers, 5 kVA and Larger: A minimum of 48 inches (1200 mm).
5. Separation between Cables and Fluorescent Fixtures: A minimum of 5 inches (127 mm).

3.3 FIRE ALARM WIRING INSTALLATION

A. Comply with NECA 1 and NFPA 72.

B. Wiring Method:

1. Cables and raceways used for fire alarm circuits, and equipment control wiring associated with the fire alarm system, may not contain any other wire or cable.
2. Access above acoustical ceiling shall not be denied by an accumulation of conductors and cables that prevent removal of ceiling tiles.
3. Fire-Rated Cables: Use of 2-hour, fire-rated fire alarm cables, NFPA 70, Type CI where required.
4. Signaling Line Circuits: Power-limited fire alarm cables may be installed in the same cable or raceway as signaling line circuits where permitted by the manufacturer.

- C. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.
- D. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.
- E. Use low voltage cables with a red outer finish. Use red fire alarm system junction boxes and covers.
- F. Wiring to Remote Alarm Transmitting Device: 1-inch (25-mm) conduit between the fire alarm control panel and the transmitter. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

3.4 CONTROL-CIRCUIT CONDUCTORS

- A. Minimum Conductor Sizes:
 - 1. Class 1 remote-control and signal circuits, No. 14 AWG.
 - 2. Class 2 low-energy, remote-control and signal circuits, No. 16 AWG.
 - 3. Class 3 low-energy, remote-control, alarm and signal circuits, No. 12 AWG.

3.5 CONNECTIONS

- A. Comply with manufacturer's requirements for connecting, terminating, and identifying wires and cables.

3.6 GROUNDING

- A. Comply with NFPA-72 for bonding and grounding requirements.

3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections as required to comply with codes, statutes, ordinances, and industry standards affecting the applicable system.
- B. Tests and Inspections:
 - 1. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 - 2. Test cabling as required to meet manufacturer specifications.
- C. End-to-end cabling will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 280513

SECTION 284621.11 - ADDRESSABLE FIRE-ALARM SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Scope: add new fire alarm devices to the existing fire alarm system, upgraded as needed to accommodate them.
- B. Section Includes:
 - 1. Fire-alarm control unit.
 - 2. Manual fire-alarm boxes.
 - 3. System smoke detectors.
 - 4. Carbon monoxide detectors.
 - 5. Heat detectors.
 - 6. Fire-alarm notification appliances.
 - 7. Magnetic door holders. (Existing)
 - 8. Remote annunciator.
 - 9. Addressable interface device.
 - 10. Digital alarm communicator transmitter
- C. Related Requirements:
 - 1. Section 280500, "Common Work Results for Electronic Safety and Security."
 - 2. Section 280513, "Conductors and Cables for Electronic Safety and Security" for cables and conductors for fire-alarm systems.

1.2 ACTION SUBMITTALS

- A. General Submittal Requirements:
 - 1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
 - 2. Shop Drawings shall be prepared by persons with the following qualifications:
 - a. Trained and certified by manufacturer in fire-alarm system design.
 - b. NICET-certified, fire-alarm technician; minimum Level IV.
 - c. Licensed or certified by authorities having jurisdiction.
- B. Product Data: For each type of product, including furnished options and accessories.

C. Shop Drawings: For fire-alarm system revisions and equipment.

1. Comply with recommendations and requirements in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
2. Include plans, elevations, sections, details, and attachments to other work.
3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements, and distinguish between factory and field wiring.
4. Detail assembly and support requirements.
5. Include voltage drop calculations for notification-appliance circuits.
6. Include new battery-size calculations.
7. Include input/output matrix.
8. Include statement from manufacturer that all equipment and components have been tested as a system and meet all requirements in this Specification and in NFPA 72.
9. Include performance parameters and installation details for each detector.
10. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
11. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale; coordinate location of duct smoke detectors and access to them.
 - a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
 - b. Show field wiring required for HVAC unit shutdown on alarm.
 - c. Locate detectors according to manufacturer's written recommendations.
12. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams.

D. Delegated-Design Submittal: For initiation devices and notification appliances, in addition to submittals listed above, indicate compliance with performance requirements when selected as a design criteria, including analysis data signed and sealed by the qualified individual responsible for their preparation. Verify manufacturer's specified circuit characteristics are complied with.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and designer.
- B. Field quality-control reports.
- C. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data for new work: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following stored on site a red fire alarm cabinet marked "Fire Alarm" installed adjacent to the sprinkler parts enclosure:
 - a. Comply with the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
 - b. Provide paper and electronic versions of "Fire Alarm and Emergency Communications System Record of Completion Documents" according to the "Completion Documents" Article in the "Documentation" section of the "Fundamentals" chapter in NFPA 72.
 - c. Paper and electronic versions of complete wiring diagrams and risers showing connections between all devices and equipment.
 - d. Record copy of site-specific software.
 - e. Provide "Inspection and Testing Form" according to the "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:
 - 1) Equipment tested.
 - 2) Frequency of testing of installed components.
 - 3) Frequency of inspection of installed components.
 - 4) Requirements and recommendations related to results of maintenance.
 - 5) Manufacturer's user training manuals.
 - f. Manufacturer's required maintenance related to system warranty requirements.
 - g. Abbreviated operating instructions for mounting at fire-alarm control unit and each annunciator unit.
 - h. Spare parts as specified below.

B. Software and Firmware Operational Documentation:

1. Provide manufacturer's latest software updates and provide new software operating and upgrade manuals.
2. Program Software Backup: Manufacturer's standard (compact disc or USB drive), complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.
5. Upon completion and acceptance of the fire alarm system programming, the Owner shall retain all software programming rights granted by the manufacturer to the Owner for the Owner's specific use. If needed, the installer or maintenance serviced operator may keep on hand a copy of the program for remote maintenance and service purposes but must convey custody of that to the Owner or his designated agent, including modifications or updates made on the Owner's behalf, immediately upon severance or expiration of the relationship for any reason.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Installer Qualifications: Installation shall be by personnel certified by NICET as certified fire-alarm technician.

- C. NFPA Certification: Obtain certification according to NFPA 72 by an NRTL (nationally recognized testing laboratory).

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail in materials or workmanship, including all parts and labor, within specified warranty period.
 - 1. Warranty Extent: All equipment and components and labor not covered in the Maintenance Service Agreement.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Noncoded, addressable system, with multiplexed signal transmission and horn/strobe evacuation.
- B. Automatic sensitivity control of certain smoke detectors.
- C. All components provided shall be listed for use with the selected system.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices or systems as applicable:
 - 1. Manual stations.
 - 2. Heat detectors.
 - 3. Smoke detectors.
 - 4. Automatic sprinkler system water flow.
 - 5. Fire-extinguishing system operation.
 - 6. Fire standpipe system.
 - 7. Dry system pressure flow switch.
- B. Fire-alarm signal shall initiate the following actions as applicable and as per AHJ:
 - 1. Continuously operate alarm notification system.
 - 2. Identify alarm and specific initiating device at fire-alarm control unit and remote annunciators.
 - 3. Transmit an alarm signal to the remote alarm receiving station.
 - 4. Unlock electric door locks in designated egress paths.
 - 5. Release fire and smoke doors held open by magnetic door holders.

6. Switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode.
7. Activate preaction systems.
8. Recall elevators to primary or alternate recall floors when applicable.
9. Activate elevator power shunt trip when applicable or permitted.
10. Activate emergency shutoffs for applicable gas and fuel supplies.
11. Record events in the system memory.

C. Supervisory signal initiation shall be by one or more of the following devices and actions:

1. Valve supervisory switch.
2. High- or low-air-pressure switch of a dry-pipe or preaction sprinkler system.
3. Duct smoke detectors.
4. Elevator shunt-trip supervision as applicable
5. Loss of communication with any panel on the network.

D. System trouble signal initiation shall be by one or more of the following devices and actions:

1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of communication with any addressable sensor, input module, relay, control module, or remote annunciator.
4. Loss of primary power at fire-alarm control unit.
5. Ground or a single break in internal circuits of fire-alarm control unit.
6. Abnormal ac voltage at fire-alarm control unit.
7. Break in standby battery circuitry.
8. Failure of battery charging.
9. Abnormal position of any switch at fire-alarm control unit or annunciator.

E. System Supervisory Signal Actions:

1. Initiate notification appliances when required by local AHJ.
2. Identify specific device initiating the event at fire-alarm control unit and remote annunciators.
3. Transmit a trouble or supervisory signal to the remote alarm receiving station, with prescriptive time-delay when prompted by local protocol.

2.3 FIRE-ALARM CONTROL UNIT

A. Manufacturers:

1. Notifier Inspire Series
2. Siemens Cerberus series
3. Simplex 4100ES series
4. Edwards EST series
5. FCI-Gamewell E3 Series

B. General Requirements for Fire-Alarm Control Unit:

1. Provide additional system capacity and equipment for compliance.

- C. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.
 - 1. Annunciator and Display: Liquid-crystal type.
 - 2. Keypad: Arranged to permit entry and execution of programming, display, and control commands.
- D. Initiating-Device, Notification Appliances, and Signaling-Line Circuits:
 - 1. Pathway Class Designations: NFPA 72, Class B.
 - 2. Pathway Survivability: Level 0.
- E. Door Holders and Locking Hardware: Class D.
- F. Notification-Appliance Circuit:
 - 1. Audible appliances shall sound in a three-pulse temporal pattern, as defined in NFPA 72.
 - 2. Where notification appliances provide signals to sleeping areas, the alarm signal shall be a 520-Hz square wave with an intensity 15 dB above the average ambient sound level or 5 dB above the maximum sound level, or at least 75 dBA, whichever is greater, measured at the pillow.
 - 3. Visual alarm appliances shall flash in synchronization where multiple appliances are in the same field of view, as defined in NFPA 72.
- G. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke-barrier walls shall be connected to fire-alarm system.
- H. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory.
- I. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to a remote alarm station.
- J. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters and digital alarm radio transmitters shall be powered by 24-V dc source unless approved otherwise by AHJ.
 - 1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.
 - 2. Duct detector power shall be derived from the fire alarm system.
- K. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.

2.4 MANUAL FIRE-ALARM BOXES

A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38.

1. Pull stations shall be red in color with contrasting white or other approved color text.
2. Single-action mechanism, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
3. Station Reset: Key- or wrench-operated switch.

2.5 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be wire type shall be matched to the application.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
4. Base Mounting: Detector and associated electronic components may be mounted in a twist-lock module that connects to a fixed base for such applications as elevator recall, door release, and the like. Provide terminals in the fixed base for connection to building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
7. Remote Control: Unless otherwise indicated, detectors shall be digital-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and may be individually adjustable for sensitivity by fire-alarm control unit. Where locally required, provide fixed-temperature sensing combination smoke- and heat-detection units which shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F (57 or 68 deg C).

B. Photoelectric Smoke Detectors:

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present average value.
 - d. Present sensitivity selected.
 - e. Sensor range (normal, dirty, etc.).

C. Duct Smoke Detectors: Photoelectric type complying with UL 268A.

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.

2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present average value.
 - d. Present sensitivity selected.
 - e. Sensor range (normal, dirty, etc.).
3. Weatherproof Duct Housing Enclosure as needed: NEMA 250, Type 4X; NRTL listed for use with the supplied detector for smoke detection in HVAC system ducts.
4. Each sensor shall have multiple levels of detection sensitivity.
5. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.
6. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.
7. Duct detectors for fire/smoke dampers: provide discreet isolated relay terminals to operate external damper motors. Coordinate all requirements with system vendor(s).

2.6 CARBON MONOXIDE DETECTORS

- A. General: Carbon monoxide detector listed for connection to fire-alarm system.
 1. Mounting: Adapter plate for outlet box mounting.
 2. Testable by introducing test carbon monoxide into the sensing cell.
 3. Detector shall provide alarm contacts and trouble contacts.
 4. Detector shall send trouble alarm when nearing end-of-life, power supply problems, or internal faults.
 5. Comply with UL 2075.
 6. Locate, mount, and wire according to manufacturer's written instructions.
 7. Provide means for addressable connection to fire-alarm system.
 8. Test button simulates an alarm condition.

2.7 HEAT DETECTORS

- A. General Requirements for Heat Detectors: Comply with UL 521.
 1. Temperature sensors shall test for and communicate the sensitivity range of the device.
- B. Heat Detector, Combination Type: Actuated by either a fixed temperature or a rate of rise.
 1. Mounting: Twist-lock base with adapter plate as needed for outlet box mounting.
 2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.

2.8 FIRE-ALARM NOTIFICATION APPLIANCES

- A. Fire-Alarm Audible Notification Appliances:

1. Description: Horns, bells, or other notification devices that cannot output voice messages.
2. Performance Criteria:
 - a. Regulatory Requirements:
 - 1) NFPA 72.
 - b. General Characteristics:
 - 1) Individually addressed, connected to signaling-line circuit, equipped for mounting as indicated, and with screw terminals for system connections.
 - 2) Connected to notification-appliance signal circuits, zoned as indicated, equipped for mounting as indicated, and with screw terminals for system connections.
 - 3) Horns: Electric-vibrating-polarized type, 24 V(dc); with provision for housing operating mechanism behind grille. Comply with UL 464. Horns must produce sound-pressure level of 90 dB(A-weighted), measured 10 ft. (3 m) from horn, using coded signal prescribed in UL 464 test protocol.
 - 4) Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.

B. Fire-Alarm Voice/Tone Notification Appliances:

1. Description: Notification appliances capable of outputting voice evacuation messages.
2. Performance Criteria:
 - a. Regulatory Requirements:
 - 1) NFPA 72.
 - 2) UL 1480.
 - b. General Characteristics:
 - 1) Speakers for Voice Notification: Locate speakers for voice notification to provide intelligibility requirements of "Notification Appliances" and "Emergency Communications Systems" chapters in NFPA 72.
 - 2) High-Range Units: Rated 2 to 15 W.
 - 3) Low-Range Units: Rated 1 to 2 W.
 - 4) Mounting: Flush or semi-recessed in finished areas. Surface mounted in unfinished areas where flush mounted is not feasible.
 - 5) Matching Transformers: Tap range matched to acoustical environment of speaker location.
 - 6) Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.

C. Fire-Alarm Visible Notification Appliances:

1. Performance Criteria:
 - a. Regulatory Requirements:

- 1) NFPA 72.
- 2) UL 1971.

b. General Characteristics:

- 1) Rated Light Output:
 - a) 15/30/75/110 cd, selectable in field.
- 2) Clear or nominal white polycarbonate lens mounted on aluminum faceplate.
- 3) Mounting: Wall mounted unless otherwise indicated.
- 4) For units with guards to prevent physical damage, light output ratings must be determined with guards in place.
- 5) Flashing must be in temporal pattern, synchronized with other units.
- 6) Strobe Leads: Factory connected to screw terminals.

2.9 MAGNETIC DOOR HOLDERS (EXISTING TO REMAIN)

A. **Coordinate requirements with Door hardware Schedule. Where required but not included in the Door Hardware package, provide equipment as described below.**

B. Description: Equipped for universal wall or floor mounting, complete with matching doorplate. Coordinate with door swings. Include flush trim as needed, extensions or stems, floor penetrations as needed.

1. Electromagnets: Require no more than 3 W to develop 25-lbf (111-N) holding force.
2. Wall-Mounted Units: Flush mounted in new walls unless otherwise indicated; surface mounted on existing walls or floors.
3. Rating: 24-V ac or dc supplied by system power supply for new systems.
4. Rating: 120-V ac emergency circuit in existing buildings.

C. Material and Finish: Match door hardware where possible.

2.10 REMOTE ANNUNCIATOR

A. Description: Annunciator functions shall match those of fire-alarm control unit for alarm, supervisory, and trouble indications. Manual switching functions shall match those of fire-alarm control unit, including acknowledging, silencing, resetting, and testing.

1. Mounting: Flush cabinet, NEMA 250, Type 1.

B. Display Type and Functional Performance: Alphanumeric display and LED indicating lights shall match those of fire-alarm control unit. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals and to review address assignments.

C. LCD display for control of paging and fire fighter telephone.

2.11 ADDRESSABLE INTERFACE DEVICE

A. General:

1. Include address-setting means on the module.
 2. Store an internal identifying code for control panel use to identify the module type.
 3. Listed for controlling HVAC fan motor controllers.
- B. Monitor Module: Microelectronic module providing a system address for alarm-initiating devices for wired applications with normally open contacts.
- C. Integral Relay: Capable of providing a direct signal to elevator controller to initiate elevator recall, to circuit-breaker shunt trip for power shutdown, or the like.
1. Allow the control panel to switch the relay contacts on command.
 2. Have a minimum of two normally open and two normally closed contacts available for field wiring.
- D. Control Module:
1. Operate notification devices.
 2. Operate solenoids for use in sprinkler service.
 3. Operate remote indicating devices.
 - a. Provide means for addressable connection to fire-alarm system.
 - b. Test button simulates alarm condition.

2.12 CENTRAL STATION MONITORING

- A. The fire alarm contractor shall notify Owner's central station monitoring entity.

2.13 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Transmitter shall be acceptable to the remote central station and AHJ and shall comply with UL 632.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit and automatically transmit to the remote central station. The system shall initiate a trouble signal to the central station upon loss of service via the alternate communication pathway. Transmitter shall automatically report service restoration to the central station. If service is lost to both service pathways, transmitter shall initiate the local trouble signal.
- C. Local functions and display at the transmitter shall include the following:
1. Verification that both pathways are available.
 2. Programming device.
 3. LED display.
 4. Manual test report function and manual transmission clear indication.
 5. Communications failure with the central station or fire-alarm control unit.
- D. Secondary Power: Integral rechargeable battery and automatic charger.
- E. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

- A. Comply with NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install all electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."
- B. Equipment Mounting: Install fire-alarm control unit in finished floor sprinkler room unless permitted otherwise by the AHJ.
- C. Install wall-mounted equipment, with tops of cabinets not more than 78 inches (1980 mm) above the finished floor.
- D. Manual Fire-Alarm Boxes:
 - 1. Install manual fire-alarm box in the normal path of egress within 60 inches (1520 mm) of the exit doorway.
 - 2. Mount manual fire-alarm box on a background of a contrasting color.
 - 3. The operable part of manual fire-alarm box shall be between 42 inches (1060 mm) and 48 inches (1220 mm) above floor level. All devices shall be mounted at the same height unless otherwise indicated.
- E. Smoke- or Heat-Detector Spacing: Comply with NFPA 72.
- F. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct. Tubes more than 36 inches (9100 mm) long shall be supported at both ends.
- G. Remote Status and Alarm Indicators: Install in a visible location near each smoke detector (especially duct detectors and smoke damper duct detectors), sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.
- H. Audible Alarm-Indicating Devices: Install per manufacturer's recommendations and specifications and per NFPA 70.
- I. Visible Alarm-Indicating Devices: Install as indicated and adjacent to or integral with each alarm speaker and at least 6 inches (150 mm) below the ceiling. Install all devices at the same height unless otherwise indicated.
- J. Device Location-Indicating Lights: Locate in public space near the device they monitor and/or as locally required.

3.2 PATHWAYS

- A. Pathways above recessed ceilings and in non-accessible locations may be routed exposed where permitted.
 - 1. Exposed pathways located less than 96 inches (2440 mm) above the floor shall be installed in EMT.

- B. Where otherwise required, Pathways shall be installed in EMT.
- C. Exposed EMT shall be painted red enamel.

3.3 CONNECTIONS

- A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system.
 - 1. Verify that hardware and devices are listed for use with installed fire-alarm system before making connections.
- B. Make addressable connections with a supervised interface device to the following devices and systems. Install the interface device less than 36 inches (910 mm) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.
 - 1. Smoke dampers in air ducts of designated HVAC duct systems.
 - 2. Magnetically held-open doors.
 - 3. Electronically locked doors and access gates.
 - 4. Alarm-initiating connection to elevator recall system and components.
 - 5. Alarm-initiating connection to activate emergency shutoffs for gas and fuel supplies.
 - 6. Supervisory connections at valve supervisory switches.
 - 7. Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.
 - 8. Supervisory connections at elevator shunt-trip breaker.

3.4 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."
- B. Install framed instructions in a location visible from fire-alarm control unit.

3.5 GROUNDING

- A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.
- B. Ground shielded cables at the control panel location only. Insulate shield at device location.

3.6 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed and directed by authorities having jurisdiction.
- B. Perform the following tests and inspections:
 - 1. Visual Inspection: Conduct visual inspection prior to testing.

- a. Inspection shall be based on completed record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" table in the "Documentation" section of the "Fundamentals" chapter.
 - b. Comply with the "Visual Inspection Frequencies" table in the "Inspection" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
- 2. System Testing: Comply with the "Test Methods" table in the "Testing" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
- 3. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" section of the "Fundamentals" chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" section of the "Inspection, Testing and Maintenance" chapter in NFPA 72.
- C. Fire-alarm system will be considered defective if it does not pass tests and inspections.
- D. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of defect remedies.
- E. Prepare test and inspection reports.
- F. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.
- G. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.7 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning at Substantial Completion, An updated service agreement shall include software support for two years.
- C. 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. Upgrading software shall include operating system and new or revised licenses for using software.
 - 1. Upgrade Notice: At least 30 days to allow Owner to schedule access to system and to upgrade computer equipment if necessary.

3.8 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system. Provide minimum 8 hours of training.

END OF SECTION 284621.11

SECTION 284700 - MASS NOTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Division 284621.11 Addressable Fire Alarm System for FACUs that interface with MNS equipment in this Section to create an EVACS.
- B. Division 26 General electrical requirements.
- C. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Mass notification system (MNS).
- 2. Autonomous control units (ACUs).
- 3. Prerecorded message devices.
- 4. Audio amplifiers.
- 5. Audible signaling devices.
- 6. Speaker-based notification appliances.
- 7. Text displays.
- 8. Visible signaling devices for hearing impaired.
- 9. Web interfaces.
- 10. Overvoltage and surge protection.
- 11. Local operator consoles (LOCs).
- 12. Software.

B. Related Requirements:

- 1. Section 284621.11 "Addressable Fire-Alarm Systems" for FACUs that interface with MNS equipment in this Section to create an EVACS.

1.3 DEFINITIONS

- A. Broadcast Media: Loudspeakers, radios, cellular phones, and other media that will carry the selected message to the selected audience.

- B. Control Unit: A system component that monitors inputs and controls outputs through various types of circuits.
 - 1. Autonomous Control Unit (ACU): The primary control unit for an in-building mass notification system (MNS).
 - 2. Emergency Communications Control Unit (ECCU): A system capable of sending mass notification messages to individual buildings, zones of buildings, individual outdoor loudspeaker arrays, or zones of outdoor loudspeaker arrays; or a building, multiple buildings, outside areas, or a combination of these.
 - 3. Fire-alarm control unit (FACU).
 - 4. Wireless Control Unit: A component that transmits/receives and processes wireless signals.
- C. Emergency Communications System (ECS): A system for the protection of life by indicating the existence of an emergency situation and communicating information necessary to facilitate an appropriate response and action.
 - 1. Distributed Recipient Mass Notification System (DRMNS): A system meant to communicate directly to targeted individuals and groups that might not be in a contiguous area.
 - 2. Emergency Voice/Alarm Communications System (EVACS): Dedicated manual or automatic facilities for originating and distributing voice instructions, as well as evacuation signals pertaining to an emergency, to the occupants of a building.
 - 3. Mass Notification System (MNS): A system used to provide information and instructions to people in buildings or other spaces using intelligible voice communications and including visual signals, text, graphics, tactile, or other communication methods (in-building MNS); and could have the capability to provide real-time information to outdoor areas and to communicate with other notification systems provided for a campus, region, or global geographic setting (wide-area MNS).
- D. Local Operating Console (LOC): Equipment used by authorized personnel and emergency responders to activate and operate a mass notification system (MNS).

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For MNS, prepared by qualified Installer.
 - 1. Include plans, elevations, sections, and mounting details.
 - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Detail fabrication and assembly of the following:
 - a. Loudspeaker clusters on poles.
 - b. Racks with amplifiers and terminations.
 - c. Control units.
 - 4. Include diagrams for power, signal, and control wiring.

- C. Delegated Design Submittal: For items listed below, indicate compliance with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Speaker placement.
 2. Speaker sound level output.
 3. Amplifier output.
 4. Remote power booster rating and locations.
 5. Battery sizing calculations.
 6. Voltage drop calculations.
 7. Seismic mounting and supports.
 8. Location of ACU and all LOCs.

1.5 INFORMATIONAL SUBMITTALS

A. Certificates:

1. Seismic Performance Certificates when applicable: For FACU, accessories, and components, from manufacturer. Include the following information:
 - a. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - b. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 - c. Detailed description of equipment anchorage devices on which certification is based and their installation requirements.

B. Test and Evaluation Reports:

1. Product Test Reports: For each amplifier and loudspeaker, for tests performed by manufacturer and witnessed by a qualified testing agency.

C. Source Quality-Control Submittals:

1. Source quality-control reports.

D. Field Quality-Control Submittals:

1. Field quality-control reports.

E. Qualification Statements: For **Installer**.

F. Sample warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For amplifiers and loudspeakers to include in operation and maintenance manuals.

- B. Computer-generated instruction card mounted behind a Lexan plastic or glass cover in a stainless steel or aluminum frame. Card must indicate those steps to be taken by an operator when a signal is received as well as functional operation of system under all conditions: normal, alarm, supervisory, and trouble.
- C. Record Documentation: System documentation to Owner including, but not limited to, the following:
 - 1. System record Drawings and wiring details, including one set of full-size printed Drawings, and CD-ROM with copies of record Drawings in PDF format and DXF format.
 - 2. Documentation of all components and wiring identification, including a copy of each equipment nameplate.
 - 3. System matrix showing interaction of all input signals with output commands.
 - 4. Documentation of system voltage, current, and resistance readings taken during installation, testing, and ATP phases of system installation.
- D. System program showing control devices and operations, and system functions of equipment and devices.
- E. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or approved online or cloud solution.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Material: Furnish extra materials to Owner that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Loudspeakers: Quantity no fewer than one unit(s).
 - 2. Fuses: Two of each type installed in the system. Provide in a box or cabinet with compartments marked with fuse types and sizes.
 - 3. Special Tools: Software, connecting cables, and proprietary equipment necessary for maintenance, testing, and reprogramming of equipment. Tools listed by part number in operation and maintenance manuals are considered special tools.
- B. Tools:
 - 1. Proprietary equipment and software required to implement future changes to MNS.
- C. Schedule of maintenance material items.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001 certified for products delivered.
- B. Installer Qualifications:

1. Personnel must be trained and certified by manufacturer for installation of units required for this Project.
2. Installation must be led by personnel certified by NICET as fire-alarm **Level III** technician.
3. Obtain certification by NRTL in accordance with NFPA 72.
4. Licensed or certified by authorities having jurisdiction.

C. Testing Field Supervisor: Currently certified by NICET at Level IV to supervise on-site testing.

1.9 FIELD CONDITIONS

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of MNS that fail(s) in materials or workmanship within specified warranty period.

1. Warranty Period: Two year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MASS NOTIFICATION SYSTEM (MNS)

A. Source Limitations: Obtain MNS from single source or producer.

B. Performance Criteria:

1. Regulatory Requirements:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.

2. General Characteristics:

- a. ECS Classification: One-way, in-building EVACS.
- b. Provide the following specified products with the MNS as directed by the AHJ:
 - 1) ACU.
 - 2) Prerecorded message device.
 - 3) Audio amplifiers.
 - 4) Audible signaling devices.
 - 5) Indoor speakers for voice notification.
 - 6) Outdoor HPSAs.
 - 7) Text displays.
 - 8) Visible signaling devices for hearing impaired.
 - 9) Web interfaces.
 - 10) Overvoltage and surge protection.
 - 11) LOCs.
 - 12) Software.

- c. Software-operated, network-based communications system with wired and wireless access points for control interface. Designated operators must be able to log in via a web browser and have complete access to their own portion of MNS.
- d. ACU must monitor and control the notification appliance network and provide consoles for local operation. Authorized personnel must be able to use a console to initiate delivery of prerecorded voice messages, provide live voice messages and instructions, and initiate visual strobe and optional textual message notification appliances. ACU must override audible fire-alarm notification signals and voice messages based on the approved sequence of operation described in the risk analysis.
- e. MNS messaging system must be capable of the following:
 - 1) Communicating through use of wired networks, or wireless networks via wireless control units, for one- or two-way communications and control between a building or area and emergency personnel.
 - 2) Automatically distribute no fewer than 100 simultaneous and unique messages to appropriate notification appliances.
 - 3) Allow multiple operators to send messages simultaneously.
 - 4) Grant access for control to another control station if location in control becomes inoperable and/or authorized operator at that control station can no longer operate the control station.
 - 5) Send voice messages and text messages with an indication of the source of message that can only be sent from message source.
 - 6) Send alert messages to end users (recipients) via multiple delivery methods including, but not limited to, the following:
 - a) Audio-visual network alerts to computers via desktop pop-up.
 - b) Text alerts to cellular phones and pagers.
 - c) Text alerts to email clients.
 - d) Text alerts to textual visible appliances.
 - e) Alerts to visible appliances.
 - f) Audio alerts to phones.
 - g) Audio alerts to loudspeakers.
 - h) Audio alerts to existing wide-area or in-building ECS.
 - i) Network alerts to other IP-connected devices via standard XML and CAP protocols.
 - 7) Suppress contact information for other end users with messages or in message headers.
- f. Live announcements or prerecorded messages. Live messages must take precedence over prerecorded messages.
- g. Notification appliance network must consist of loudspeakers and visual notification devices located to provide intelligible instructions at all acoustically distinguishable spaces designated by designer to receive messages.
- h. Interface with FACU to use voice modules, visual alarms, and loudspeakers of fire-alarm system.
- i. Give priority to MNS announcements over other audible announcements of the system including fire-alarm system in a normal or alarm state based on the approved risk analysis. When an emergency announcement other than fire is activated during a fire alarm, fire-alarm system functions must continue in an

alarm state, except for output signals of fire-alarm audible and visual notification appliances.

- j. Comply with speech intelligibility requirements of NFPA 72.
- k. Capable of overriding local control of loudspeaker volume levels for emergency communications. Local controls must be permitted to adjust volume levels of non-emergency signals only, such as, but not limited to, background music and convenience paging.
- l. Capable of providing separate messages to one individual building or to multiple buildings at given time if MNS serves more than one building.
- m. Capable of monitoring emergency notifications from multiple data sources (National Weather Service, Emergency Managers Weather Information Network, Naval Meteorology and Oceanography, and others as determined locally) and automatically send out notifications to designated facilities and personnel based on predefined rules.
- n. Capable of centrally tracking, in real-time, all alerting activities for each individual recipient, including sending, receiving, and responding to alerts, and of generating reports based on tracked information.
- o. Capable of operating remote printer via USB output. Provide matching printer listed and labeled as part of MNS.
- p. Primary Power: Must be sized to supply not less than 125 percent of the total connected load in a worst-case condition.

1) Devices Powered by 24 V dc:

- a) Control units.
- b) Notification appliances.
- c) Text displays.
- d) Trouble signals.
- e) Supervisory signals.
- f) Supervisory and digital alarm communicator transmitters.
- g) Digital alarm radio transmitters.

- q. Secondary Power: Must be sized to supply not less than 125 percent of the total connected load in a worst-case condition.

1) Batteries: Sealed lead calcium or per manufacturer's recommendations.

2.2 AUTONOMOUS CONTROL UNITS (ACUs)

- 1. Manufacturers: See Division 284621.11
- 2. Regulatory Requirements:
 - a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.
- 3. General Characteristics:
 - a. Fully enclosed in a lockable steel cabinet with access for testing, and maintenance from the front of enclosure.

- b. Solid-state, modular components, internally mounted and arranged for easy access for power, supervision, control, and logic for system.
- c. 120 V ac, 60 Hz power supply.
- d. An indicator for each message source must indicate which sources are available and which are selected.
- e. Indicators for broadcast media used to convey the selected message to selected audience must indicate which sources are available and which are selected.
- f. Capable of confirming receipt of a message. If message was not confirmed received, system must be capable of using other means of contact until receipt of confirmation or until a preset time has elapsed.
- g. Capable of automatically sending another message after receipt of a new information or messages.
- h. Operator Access Functions:
 - 1) Select prerecorded message for transmission.
 - 2) Select microphone for live broadcast.
 - 3) Initiate message broadcast.
 - 4) Terminate message broadcast.
- i. Supervisory Access Functions:
 - 1) Reset time and date.
 - 2) Enable or disable printouts, initiators, and event-initiated programs.
 - 3) Enable or disable individual message sources and broadcast media.
 - 4) Supervisory level functions must not require computer programming skills. MNS must record changes to program functions, to be maintained in ACU for a minimum of one year. ACU must maintain the ID of supervisor making the change.
- j. System Operator Level Access Functions:
 - 1) Clear supervisory trouble alarms.
 - 2) Revise programming.
 - 3) Revise prerecorded messages.
 - 4) Assign access rights to all levels.
 - 5) MNS must record changes at system operator level in ACU, to be maintained for a minimum of **one year**. ACU must maintain the ID of system operator making the change.
- k. Capable of no fewer than 1000 users, with each user having its own log-in and password credentials and no fewer than four contact methods.
- l. Capable of storing users in one or multiple groups and able to create a minimum of 10 groups.
- m. Each panel must have supervisory functions for power failure, internal component failure, and operation.
- n. MNS must have complete set of self-diagnostics for controller and appliance network, and local diagnostic information display, local diagnostic information, and system event log.
- o. Printed records of changes, supervisory functions, message transmission, and operator actions must be maintained for a minimum of one year.

2.3 PRERECORDED MESSAGE DEVICES

- A. Description: Hardware that stores and outputs audible signals or messages.
- B. Performance Criteria:
 - 1. Regulatory Characteristics:
 - a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.
 - 2. General Characteristics:
 - a. One-way, multichannel voice notification system incorporating no fewer than eight distinct sounds selectable by user for tone signaling and incorporating a voice module for delivery of prerecorded or live messages.
 - b. Redundant microphones, preamplifiers, amplifiers, and tone generators provided in separate main and remote cabinets.
 - c. Voice notification system must support facility-wide public address paging.
 - d. Audible appliances must produce an initial message stating "May I have your attention please?" followed by a voice message with instructions as defined by the risk analysis that is repeated until ACU is reset or silenced. If the intent is for building or floor evacuation, the standard temporal pattern complying with ASA S3.41 will follow the message.
 - e. Automatic messages must be broadcast through loudspeakers throughout the building or facility, but not in stairs or elevators.
 - f. When using microphones, live messages must be broadcast throughout a selected floor or floors or all call, including stairs and elevators.
 - g. Loudspeakers must not be installed in near a microphone that will be used for live messaging.
 - h. Live voice message must override automatic or recorded audible output through use of a microphone input at ACU or the remote cabinet.
 - i. Number of alarm channels must be indicated for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of the central-control microphone.
 - 1) Allow sending an evacuation signal to selected zones and, concurrently, allow voice paging to other zones selectively or in combination.
 - 2) Programmable tone and message sequence selection.
 - 3) Standard digitally recorded messages for "Evacuation" and "All Clear."

2.4 AUDIO AMPLIFIERS

- A. Performance Criteria:
 - 1. Regulatory Characteristics:
 - a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 1711 and marked for intended location and application.
 - b. ISO 7240-16.

2. General Characteristics:

- a. Audio output must be selectable for line level. Minimum amplifier output must be 100 W rms each.
- b. Capable of operating all loudspeakers at the same time.
- c. Loss of operating power, supervisory power, or other malfunction that could render the voice module inoperative must automatically cause the standard temporal tone pattern complying with ASA S3.41 to take over all functions assigned to failed unit in the event an alarm is activated.

2.5 AUDIBLE SIGNALING DEVICES

A. Description: Hardware for broadcast of live voice messages.

B. Performance Criteria:

1. Regulatory Characteristics:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 464 and marked for intended location and application.

2. General Characteristics:

- a. Handheld push-to-talk microphone must be supervised and a key must be required to enable remote microphone use.
- b. Microprocessor must actively integrate circuitry, field wiring, and digital coding necessary for immediate and accurate rebroadcasting of stored voice data into appropriate amplifier input.

2.6 SPEAKER-BASED NOTIFICATION APPLIANCES

A. Description: Hardware for public alert/message output.

B. Indoor Speakers for Voice Notification:

1. Performance Criteria:

a. Regulatory Characteristics:

- 1) Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 1480 and marked for intended location and application.

2. General Characteristics:

- a. Construction: High efficiency, sealed back; for maximum output at minimum power across a frequency range of 150 to 10 000 Hz.
- b. High-Range Units: Rated 2 to 15 W.
- c. Low-Range Units: Rated 1 to 2 W.

- d. Mounting: Flush or semi-recessed where possible; surface mounted and bidirectional where permitted by the Architect.
- e. Matching Transformers: Tap range matched to acoustical environment of loudspeaker location.

2.7 TEXT DISPLAYS

2.8 VISIBLE SIGNALING DEVICES FOR HEARING IMPAIRED

A. Performance Criteria:

1. Regulatory Characteristics:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 1971 and marked for intended location and application.

2. General Characteristics:

- a. Strobes must be visually distinct from fire-alarm notification strobes.
- b. Strobes used solely for MNS must be clear, comply with UL 1971, and have the word "ALERT" factory printed on the trim.
- c. Strobes used in combination systems, where the same strobe is used for both MNS and fire notification, must be clear and comply with UL 1971.
- d. Strobes used for MNS must be synchronized in accordance with requirements of NFPA 72.

2.9 WEB INTERFACES

A. Description: Systems hardware capable of using dedicated or existing IP networks to send alert messages.

B. Performance Criteria:

1. Regulatory Characteristics:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.

2. General Characteristics:

- a. System must be able to communicate with multiple modalities to include, but not be limited to, pop-up alerts on PCs, text messages to cellular phones, email messaging to IP-capable computers or devices, and recorded voice messages to VoIP telephones and PCs.
- b. Capable of activating, through single interface, non-IP alerting systems such as wide-area alerting systems, fire-alarm systems, public address systems, handheld radio systems, radio broadcast systems, personal pager systems, nurse call systems, and traditional dial-up telephone alerting systems.

3. Options:
 - a. Capable of accessing user screens via multiple web browsers such as Microsoft Explorer, Mozilla Firefox, or Apple Safari.
 - b. Capable of sending live video stream from IP-based camera or security camera system to PC or video display.

2.10 OVERVOLTAGE AND SURGE PROTECTION

A. Signaling Line Circuit Surge Protection:

1. Performance Criteria:
 - a. Regulatory Characteristics:
 - 1) Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 497B and marked for intended location and application.
 - b. General Characteristics:
 - 1) Protected against surges induced on signaling line circuit located outdoors.
 - 2) Protect cables and conductors that serve as communications links with surge protection devices installed at each end that comply with the following waveforms:
 - a) 10 by 1000-microsecond waveform with a peak of 1500 V and a peak current of 60 A.
 - b) 8 by 20-microsecond waveform with a peak of 1000 V and a peak current of 500 A. Protection must be provided at the equipment. Additional surge protectors, rated for application, must be installed on each circuit within 36 inch (900 mm) of the cable entrance to building.
 - 3) Fuses must not be used for surge protection.

B. Sensor Wiring Surge Protection:

1. Performance Criteria:
 - a. Regulatory Characteristics:
 - 1) Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 497D and marked for intended location and application.
 - b. General Characteristics:
 - 1) Digital and analog inputs and outputs must be protected against surges induced by sensor wiring. Inputs and outputs must be tested with the following waveforms:

- a) 10 by 1000-microsecond waveform with a peak of 1500 V and a peak current of 60 A.
- b) 8 by 20-microsecond waveform with a peak of 1000 V and a peak current of 500 A.

2) Fuses must not be used for surge protection.

2.11 LOCAL OPERATING CONSOLES (LOCs)

A. Description: Remote message initiation console.

B. Performance Criteria:

1. Regulatory Characteristics:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.

2. General Characteristics:

- a. Capable of initiating recorded messages and displays, and for delivering live voice messages.
- b. Capacity for no fewer than eight prerecorded messages and ability to automatically repeat prerecorded messages.
- c. Having a microphone for delivering live messages.
- d. FACU Interface: Adequate discrete outputs to temporarily deactivate the fire-alarm audible notification appliances while delivering voice messages.
- e. LOC must be capable of being locked out or overridden from ACU.

3. Options:

- a. Provide redundant control of ACU.
- b. When an installation has more than one LOC, LOCs must be programmed to allow only one LOC at a time to be available for messaging. Once one LOC becomes active, all other LOCs will have an indication that the system is busy (Amber Busy Light) and cannot be used at that time.

2.12 SOFTWARE

A. Description: PC-based equipment that is field programmable for control, notification, and supervisory functions; menu-driven program configuration; password protected.

B. Performance Criteria:

1. Regulatory Characteristics:

- a. Listed and labeled by a NRTL in accordance with NFPA 70, Article 760; NFPA 72, Ch. 24; and UL 2572 and marked for intended location and application.

2. General Characteristics:

- a. Loading and editing instructions and operating sequences as necessary.
- b. Storing and downloading while the system is in operation.
- c. Second set of operating software must reside in control units as backup if primary operating software is corrupted.
- d. Allows 10 to 50 remote users.
- e. Operating system used must be compatible with manufacturer software operating system.
- f. Memory: Software operations must be stored in nonvolatile programmable memory within MNS control unit. Loss of primary and secondary power must not erase nonvolatile programmable memory.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with installation requirements in NFPA 70, NFPA 72, and NECA 1.
- B. Install remote amplification and control units in terminal cabinets. Power each remote amplification and control unit from a wiring riser specifically for that use or from a local emergency power panel located on the same floor as remote unit.
- C. Comply with requirements in Section 260519 "Low-Voltage Power Conductors and Cables" for cables and conductors for MNS.
- D. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used. Conceal raceway and cables except in unfinished spaces.
 - 1. Install plenum cable in environmental airspaces, including plenum ceilings and in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring is used.
 - 2. Comply with requirements for cable trays specified in Section 270536 "Cable Trays for Communications Systems."
 - 3. Comply with requirements for raceways and boxes specified in Section 270528 "Pathways for Communications Systems."
 - 4. Conceal conductors and cables in accessible ceilings, walls, and floors where possible. Suspend cable not in a wireway or pathway a minimum of 8 inch (200 mm) above ceiling by cable supports not more than 60 inch (1500 mm) apart.
 - 5. Do not install cable through structural members or in contact with pipes, ducts, or other potentially damaging items.

6. Secure and support cables at intervals not exceeding 30 inch (750 mm) and not more than 6 inch (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's written limitations on bending radii. Maintain separation of conductor types as recommended by manufacturer. Install lacing bars and distribution spools.
 8. 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.
 9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamp use is prohibited.
 10. Separation of Wires: Separate loudspeaker-microphone, line-level, loudspeaker-level, and power wiring runs. Install MNS wiring in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inch (300 mm) apart for loudspeaker-microphone wiring and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.
 11. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's written limitations on bending radii. Install lacing bars and distribution spools. Route conductors to allow accessibility to equipment for adjustment and maintenance.
 12. Connections:
 - a. Make all terminations on numbered terminal strips in terminal cabinets or equipment enclosures. No splices or butt joints will be accepted.
 - b. Terminate all conductors; no cable must contain unterminated elements.
 - c. Crimp-on spade lugs must be used for terminations of stranded conductors to binder screw or stud terminals. Spade lugs must have upset legs and insulation sleeves sized for conductors.
 13. Mount all devices and appliances to or in an approved electrical box.
- E. Install operating instruction placard on the interior of ACU.
- F. Install operating instruction placard on the frame in location acceptable to Architect and observable from ACU.
- G. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.
- H. Cybersecurity:
1. Software:
 - a. Coordinate security requirements with IT department.
 - b. Ensure that latest stable software release is installed and properly operating.
 - c. Disable or change default passwords to password using a combination of uppercase and lower letters, numbers, and symbols no fewer than eight characters in length. Record passwords and turn over to party responsible for system operation and administration.
 2. Hardware:

- a. Coordinate location and access requirements with IT department.
- b. Enable highest level of wireless encryption that is compatible with Owner's ICT network.
- c. Disable dual network connections.

3.3 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate at main equipment cabinet. Connect to instrument ground system and isolate from power system and equipment grounding.

3.4 IDENTIFICATION

- A. Comply with requirements in Section 270553 "Identification for Communications Systems."
- B. Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.
- C. Permanently label or mark each conductor at both ends with permanent alphanumeric wire markers.
- D. Install framed instructions in a location visible from mass notification control unit.

3.5 FIELD QUALITY CONTROL

- A. Prepare a written ATP for testing MNS components and installation in accordance with NFPA 72 and this Section. Demonstrate specified function of system and verify the correct operation of all system components, circuits, and programming.
 - 1. Prepare a complete listing of device labels for alphanumeric annunciator displays prior to ATP.
- B. Field acceptance tests must be witnessed by Architect and authorities having jurisdiction.
- C. Testing Adminstrant:
 - 1. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections.
- D. Tests and Inspections:
 - 1. Take resistance, current, and voltage readings as work progresses.
 - 2. Signal Ground Test: Measure and report ground resistance at public address equipment signal ground. Comply with testing requirements specified in Section 270526 "Grounding and Bonding for Communications Systems."
 - 3. Verify that wiring for each device is terminated at properly identified terminals.
 - 4. Test wiring runs for continuity, short circuits, and grounds before system is energized.

5. All test equipment, instruments, tools, and labor required to conduct system tests must be made available by installing Contractor. The following equipment must be a minimum for conducting tests:
 - a. Ladders and scaffolds as required to access all installed equipment.
 - b. Multi-meter for reading voltage, current, and resistance.
 - c. Two-way radios and flashlights.
 - d. Decibel meter.
 - e. In addition to testing specified to be performed by installing Contractor, installation must be subject to test by Owner, Architect, Construction Manager.
6. Schedule tests with no fewer than seven days' advance notice of test performance.
7. After installing MNS and after electrical circuitry has been energized, test for compliance with requirements.
8. Sound level measurements must be taken at a worst-case location within each room or grid, not near loudspeakers.
9. Operational Test: Perform tests that include originating messages at microphone outlets, prerecorded messages, remote wired and non-wired inputs, telephone, cellular and other inputs. Verify proper routing and volume levels and that system is free of noise and distortion.
10. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a. Disconnect microphone at connector or jack closest to it and replace it in the circuit with a signal generator using a 1000 Hz signal. Measure signal-to-noise ratio.
 - b. Repeat test for each separately controlled zone of loudspeakers.
 - c. Minimum acceptance ratio is 50 dB.
11. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 50, 200, 400, 1000, 3000, 8000, and 12 000 Hz into each preamplifier channel. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 3 percent total harmonics.
12. Intelligibility Test: Test for intelligibility in accordance with NFPA 72.
13. Power Output Test: Measure electrical power output of each power amplifier at normal gain settings of 50, 1000, and 12 000 Hz. Maximum variation in power output at these frequencies must not exceed plus or minus 1 dB. Outdoor sound levels where personnel may be present must not exceed 120 dB(A-weighted) when measured on the A-scale of a standard sound level meter at slow response. Sound levels must not exceed 85 dB(A-weighted) at local microphone of MNS under the same conditions.
14. System notification appliances must be demonstrated as follows:
 - a. All alarm notification appliances actuate as programmed.
 - b. Audibility and visibility at required levels.
 - c. Messages are intelligible in all areas.
15. System indications must be demonstrated as follows:
 - a. Correct message display at MNS ACU for each alarm input.
 - b. Correct message display at remote panels and annunciators for each alarm input.
 - c. Correct history logging for all system activity.

16. System off-site reporting functions must be demonstrated as follows:

- a. Correct zone transmitted for each alarm input.
- b. Trouble signals received.

E. MNS will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain units.

- 1. Train a minimum of ten employees of Owner.
- 2. Conduct training on installed equipment after acceptance testing.
- 3. Train on system operation, including manual control of output functions from ACU.
- 4. Train on testing of system, including logging of system tests, field test of devices, and response to common troubles.
- 5. Total training requirement must be a minimum of two four-hour sessions but must be sufficient to cover all items specified.

3.7 SOFTWARE SERVICE AGREEMENT

A. Technical Support: Beginning at Substantial Completion, service agreement must include software support for two years.

B. 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. Upgrading software must include operating system and new or revised licenses for using software.

- 1. Upgrade Notice: Provide no less than 30 days' notice to allow Owner to schedule and access the system and to upgrade computer equipment if necessary.

END OF SECTION 284700