PROJECT MANUAL
FOR

EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES

DES PLAINES, ILLINOIS; SKOKIE, ILLINOIS

OWNER

OAKTON COLLEGE
1600 E. GOLF ROAD
DES PLAINES, ILLINOIS 60016

ARCHITECT / ENGINEER

KLUBER, INC.
41 W. BENTON STREET
AURORA, ILLINOIS 60506

DATE: JUNE 2, 2025
PROJECT NO. 22-315-1435

BID & PERMIT DOCUMENTS

SECTION 00 01 01
PROJECT TITLE PAGE

PROJECT MANUAL

FOR

EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES

DES PLAINES CAMPUS

1600 E GOLF ROAD

DES PLAINES, ILLINOIS 60016

SKOKIE CAMPUS

7701 N LINCOLN AVENUE

SKOKIE, ILLINOIS 60077

OWNER

OAKTON COLLEGE

1600 E GOLF ROAD

DES PLAINES, ILLINOIS 60016

ARCHITECT / ENGINEER

KLUBER ARCHITECTS + ENGINEERS

41 W. BENTON STREET

AURORA, ILLINOIS 60506

END OF DOCUMENT

SECTION 00 01 07
SEALS PAGE

1.01 DESIGN PROFESSIONALS' SEALS

A. ARCHITECT

ARCHITECT'S SEAL

expires 11-30-20 26

signature

June 02, 2025

date

"G" SERIES, "A" SERIES

END OF DOCUMENT

SECTION 00 01 10
TABLE OF CONTENTS

END OF SECTION

SECTION 00 01 15
DRAWING INDEX

GENERAL

G100 COVER SHEET, GENERAL NOTES, SYMBOLS & DRAWING INDEX

ARCHITECTURAL / TECHNOLOGY

AT102 DES PLAINES MAIN BUILDING LOWER LEVEL FLOOR PLAN

AT111 DES PLAINES MAIN BUILDING FIRST FLOOR PLAN - WEST

AT112 DES PLAINES MAIN BUILDING FIRST FLOOR PLAN - CENTER

AT113 DES PLAINES MAIN BUILDING FIRST FLOOR PLAN - EAST

AT122 DES PLAINES MAIN BUILDING SECOND FLOOR PLAN - CENTER

AT123 DES PLAINES MAIN BUILDING SECOND FLOOR PLAN - EAST

AT132 DES PLAINES MAIN BUILDING THIRD FLOOR PLAN

AT142 DES PLAINES MAIN BUILDING PENTHOUSE PLAN

AT200 DES PLAINES LEE CENTER FIRST FLOOR AND PENTHOUSE PLANS

AT311 SKOKIE BUILDINGS A, B, C FIRST FLOOR PLAN

AT312 SKOKIE BUILDINGS A, P FIRST FLOOR PLAN

AT321 SKOKIE BUILDINGS A, B, C SECOND FLOOR PLAN

AT322 SKOKIE BUILDINGS A, P SECOND FLOOR PLAN

AT600 ACCESS CONTROL DETAILS

AT601 ACCESS CONTROL DETAILS

AT800 DOOR, FRAME AND HARDWARE SCHEDULE

END OF DOCUMENT

SECTION 00 31 13
PRELIMINARY SCHEDULE

1.01 GENERAL

A. The following represents the preliminary construction schedule for the Work. This schedule is the current estimate of the Owner to be used for purposes of bidding. All Bidders shall include the costs of all overtime, double-shift, or so-called "premium" time that may be necessary to meet this milestone.

1.02 PRELIMINARY SCHEDULE

A. Award of Contract: July 28, 2025

B. Commencement of Construction: August 1, 2025

C. Substantial Completion: June 30, 2026

END OF DOCUMENT

SECTION 00 41 13
BID FORM - STIPULATED SUM

SINGLE CONTRACT

PROJECT: **EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES**
1600 E GOLF ROAD
DES PLAINES, ILLINOIS 60016

BID TO: **OAKTON COLLEGE**
1600 E GOLF ROAD
DES PLAINES, ILLINOIS 60016

BID FROM:

CORPORATE NAME: _____

ADDRESS: _____

CITY, STATE, ZIP: _____

TELEPHONE NO.: _____

FAX NO.: _____

EMAIL ADDRESS: _____

CONTACT PERSON: _____

1.01 ACCEPTANCE

THE UNDERSIGNED BIDDER AGREES, IF THIS BID IS ACCEPTED, TO ENTER INTO AN AGREEMENT WITH THE OWNER, IN THE FORM INCLUDED IN THE BIDDING DOCUMENTS, TO PERFORM AND FURNISH THE WORK AS INDICATED IN THE BIDDING DOCUMENTS FOR THE BID PRICE AND WITHIN THE BID TIMES INDICATED IN THIS BID AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE CONTRACT DOCUMENTS.

1.02 ACKNOWLEDGMENTS

IN SUBMITTING THIS BID, THE BIDDER REPRESENTS THAT:

A. This Bid will remain open for acceptance for a period of 45 days from the Bid opening date;

B. The Owner has the right to reject this Bid;

C. The Bidder accepts the provisions of the Instructions and Supplementary Instructions to Bidders regarding the disposition of the Bid;

D. The Bidder agrees to sign and submit the Agreement and other documents required by the Bidding Requirements within 15 days after the Owner's Notice of Award;

E. The Bidder has examined the complete set of Bidding Documents;

F. The Bidder has visited the site and become familiar with the general, local, and site conditions;

G. The Bidder is familiar with Federal, State and Local Laws and Regulations;

H. The Bidder has correlated the information known to the Bidder; information and observations obtained from visits to the site, reports and drawings identified in the Bidding Documents and additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. This Bid is genuine and not made in the interest of or on behalf of an undisclosed person, firm, or corporation and is not submitted in conformity with an Agreement or rules or group, association, organization, or corporation;

J. The Bidder has not directly or indirectly induced or solicited another Bidder to submit a false or sham Bid; sought by collusion to obtain for itself an advantage over another Bidder or over the Owner;

K. The Bidder is/has an ICC Certified Energy Efficiency Measures Installer to qualify for Utility Energy Incentives.

L. The Bidder has received the following Addenda, receipt of which is hereby acknowledged:

1. Addendum No. _____Date _____

2. Addendum No. _____Date _____

3. Addendum No. _____Date _____

THE BIDDER UNDERSTANDS THAT, IN SUBMITTING THIS BID, HE WAIVES ALL RIGHT TO PLEAD ANY MISUNDERSTANDINGS REGARDING THE FOREGOING.

1.03 SINGLE CONTRACT - BASE BID PRICE:

A. Refer to Section 01 10 00 - Summary.

B. The Bidder will complete the Work of the Project in accordance with the Contract Documents for the following price:

1. Stipulated Sum Bid Price:

_____

(Use Numerals)

_____

(Use Words)

1.04 BID BOND

A. The Bidder has attached the required bid security in the form described by Document 00 43 13 - Bid Security Form with this Bid.

1.05 UNIT PRICES

A. The Bidder has attached Document 00 43 22 - Bid Form Supplement - List of Unit Prices with this Bid.

1.06 CONTRACT TIME

A. The Bidder agrees to begin and complete Work as indicated in Document 00 31 13 - Preliminary Schedule.

1.07 SIGNATURES

Respectfully submitted this _____ day of _____, 20____.

Type of Firm: (check one)

_____ Individual

_____ Partnership

_____ Corporation

_____ Joint Venture

Corporate Seal:(SEAL)

Full name of firm: _____

Authorized Signing Officer: _____

Title: _____

Authorized Signing Officer: _____

Title: _____

END OF DOCUMENT

SECTION 00 43 13
BID SECURITY FORM

1.01 FORM OF BID BOND

A. AIA Document A310 (2010 Edition) - Bid Bond Form.

B. The above document may be examined at the Architect/Engineer's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

END OF DOCUMENT

SECTION 00 43 22
BID FORM SUPPLEMENT - LIST OF UNIT PRICES

CONSTRUCTION DELIVERY METHOD:

SINGLE CONTRACT (GENERAL CONSTRUCTION)

1.01 PARTICULARS

A. The following is the list of Unit Prices referenced in the bid submitted by:

Bidder)_____

dated _____ and which is an integral part of the Bid Form.

B. THE FOLLOWING ARE UNIT PRICES FOR SPECIFIC PORTIONS OF THE WORK AS LISTED AND ARE APPLICABLE TO AUTHORIZED VARIATIONS FROM THE CONTRACT DOCUMENTS.
   1. Costs Included in Unit Prices: Products, delivery, installation, labor, payroll, taxes, bonding, insurance, equipment, fuel, maintenance.

1.02 UNIT PRICE LIST

UNIT ITEM DESCRIPTION	UNITS	VALUE
Ball bearing butt hinges - exterior.	EA	$_____
Continuous hinge; up to 8'-0" high.	EA	$_____
Exit device; rim panic; non-fire-rated; sized for 3'-0" wide door; less cylinder.	EA	$_____
Add for electric latch retraction option on exit device, including power transfer, power supply and door and frame preps.	EA	$_____
Add for electric unlocking lever on exit device, including power transfer, power supply and door and frame.	EA	$_____
Mortise cylinder: housing and interchangeable core; high security.	EA	$_____
Mortise cylinder: housing and interchangeable core; standard security.	EA	$_____
Rim cylinder: housing and interchangeable core; high security.	EA	$_____
Rim cylinder: housing and interchangeable core; standard security.	EA	$_____
Door closer, including drop plates and other accessory components required for complete installation.	EA	$_____
Add for cushion stop function arm on door closer.	EA	$_____
Add for hold-open function on door closer arm.	EA	$_____
Offset pull.	EA	$_____
Threshold: saddle type; 6" min. width	LF	$_____
Weatherstripping: mechanically attached; adjustable type.	LF	$_____
Steel door; thermally insulated; field painted.	EA	$_____
Glazed aluminum storefront door: wide stile; including insulated glazing, manufacturer's standard perimeter weatherstripping.	EA	$_____
Electric strike: mortise type; including wiring and final connections.	EA	$_____
Electric strike; rim type; including wiring and final connections.	EA	$_____

Door position switch, per door leaf; including wiring and final connections.	EA	$_____
Proximity reader, including recessed backbox, conduit to accessible ceiling space, wiring and final connections.	EA	$_____

END OF DOCUMENT

SECTION 00 52 00
AGREEMENT FORM

1.01 FORM OF AGREEMENT

A. AIA Document A101, Owner-Contractor Agreement Form - Stipulated Sum (2017 Edition), forms the basis of Contract between the Owner and Contractor.

B. The above document may be examined at the Architect's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

1.02 RELATED REQUIREMENTS

A. Document 00 72 00 - General Conditions.

B. Document 00 73 00 - Supplementary Conditions.

END OF DOCUMENT

SECTION 00 72 00
GENERAL CONDITIONS

1.01 FORM OF GENERAL CONDITIONS

AIA Document A201 - 2007 "General Conditions of the Contract for Construction" is the General Conditions between the Owner and Contractor.

A. AIA Document A201 - 2017 "General Conditions of the Contract for Construction" is the General Conditions between the Owner and Contractor.

B. The above document may be examined at the Architect's office or purchased at the American Institute of Architects, http://www.aia.org/contractdocs/.

1.02 RELATED REQUIREMENTS

A. Section 00 73 00 - Supplementary Conditions.

1.03 SUPPLEMENTARY CONDITIONS

A. Refer to Document 00 73 00 for amendments to these General Conditions.

END OF DOCUMENT

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS

1.01 GENERAL

A. The Supplementary Conditions contain modifications and additions to AIA Document A201 - 2007 "General Conditions of the Contract for Construction". Where a portion of the General Conditions is modified, deleted or voided by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect. Where there is a conflict between these Supplementary Conditions and the General Conditions, the terms of these Supplementary Conditions shall prevail.

B. The Owner's Document entitled "General Conditions For Construction And Maintenance Work At Oakton College, Des Plaines And Ray Hartstein Campuses" contains further modifications and additions to AIA Document A201 - 2007 "General Conditions of the Contract for Construction". Where a portion of the General Conditions is modified, deleted or voided by this Document, the unaltered portions of the General Conditions shall remain in effect. Where the provisions of the Owner's Document conflict with the provisions of AIA Document A201 or these Supplementary Conditions, the Owner's Document provisions shall prevail.

1.02 ARTICLE 1 GENERAL PROVISIONS

A. **1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS**
   1. At the end of the last sentence of Section 1.2.1, replace the words "indicated results." with the following: "intended results. In the event the Contract Documents conflict, the Contractor shall comply with the more stringent of the requirements."
   2. Add new Section 1.2.2.1 as follows:
      a. "**§ 1.2.2.1** Sections of Division 1 - General Requirements govern the execution of the Work of all Sections of the specifications."

B. **1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE**
   1. After the first sentence of Section 1.5.1, insert the following:
      a. "These Instruments of Service are the tangible rendering of professional opinions and service for the Owner and are not, therefore, a commodity, product or good. No warranties, express or implied, are made by the Architect to the Contractor concerning those Instruments of Service."

1.03 ARTICLE 2 OWNER

A. **2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER**
   1. Delete the third sentence of Section 2.2.1.
   2. Delete Section 2.2.5 in its entirety and replace with the following:
      a. "**§ 2.2.5** The Owner shall furnish to the Contractor one (1) PDF copy of the Contract Documents for the purposes of making reproductions pursuant to Section 1.5.2."

B. Add new Section 2.5 as follows:
   1. "**§ 2.5 OWNER'S REMEDIES NOT EXCLUSIVE**

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

1.04 ARTICLE 3 CONTRACTOR

A. 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTACTOR

1. Delete Section 3.2.1 in its entirety and replace with the following:
   a. "**§ 3.2.1** Execution of the Contract by the Contractor is a representation by the Contractor that, prior to the submission of its bid, the Contractor has (1) thoroughly examined the Contract Documents and determined them to be full, complete and sufficient to enable the Contractor to construct the Work outlined therein, in accordance with applicable laws and regulations, for an amount not in excess of the Contract Sum on or before the date(s) of Substantial Completion established in the Agreement; (2) visited and examined the Project site and is familiar with all of the conditions thereon; (3) examined the nature, location and character of the general area in which the Project is located, including, without limitation, its climactic conditions, available labor supply, labor costs and available equipment supply and costs; and (4) examined the quality and quantity of materials, supplies, tools, equipment, labor and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents."
2. Delete Section 3.2.3.
3. Add new Section 3.2.5 as follows:
   a. "**§ 3.2.5** Prior to any excavation, the Contractor shall determine the locations of all existing water, gas, sewer, electric, telephone, telegraph, television, irrigation, petroleum pipelines, and other underground utilities and structures. Where the locations of existing underground and surface utilities and structures are indicated, these locations are generally approximate, and all items that may be encountered during the work are not necessarily indicated. The Contractor shall determine the exact locations of all items indicated, and the existence and locations of all items not indicated."

B. 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

1. Add new Sections 3.3.4 through 3.3.7 as follows:
   a. "**§ 3.3.4** The Contractor has the responsibility to ensure that all material suppliers and Subcontractors, their agents, and employees adhere to the Contract Documents, and that they order materials on time, taking into account the current market and delivery conditions and that they provide materials on time. The Contractor shall coordinate its Work, including without limitation, deliveries, storage, installations, and construction utilities with that of all others on the Project. The Contractor shall be responsible for the space requirements, locations, and routing of its equipment. In areas and locations where the proper and most effective space requirements, locations and routing cannot be made as indicated, the Contractor shall meet with all others involved, before installation, to plan the most effective method of overall installation.
   b. **3.3.5** All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless herein specified to the contrary.

c. **3.3.6** After commencing the work, the Contractor shall use every precaution to avoid interferences with existing underground and surface utilities and structures and protect them from damage. The Contractor shall repair or pay for all damage caused by his operations to all existing utility lines, public property, and private property, whether it is below ground or above ground, and he shall settle in total cost of all damage suits which may arise as a result of his operations at no additional costs to the Owner. To avoid unnecessary interferences or delays, the Contractor shall coordinate all utility removals, replacements and construction with the appropriate utility company. The cost of temporarily relocating utilities for convenience of the Contractor, shall be paid by Contractor.

d. **3.3.7** The Contractor shall establish and maintain benchmarks and all other grades, lines, and levels necessary for the Work, report errors or inconsistencies to the Owner and Architect before commencing Work, and review the placement of the building and permanent facilities on the site with the Owner and Architect after all lines are staked out and before foundation Work is started."

C. **3.4 LABOR AND MATERIALS**

1. Delete Section 3.4.2 in its entirety and replace with the following:
   a. "**§ 3.4.2** After the Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Section 01 60 00)."
2. Add new Section 3.4.4 as follows:
   a. "**§ 3.4.4** The Contractor and each Subcontractor shall pay not less than the general prevailing rate of hourly wages for work of a similar character in the locality in which the work is performed and not less than general prevailing rate of hourly wages for legal holidays and overtime work in the performance of work under this Contract, as established by the Illinois Department of Labor, pursuant to an act of the General Assembly of the State of Illinois. In accordance with applicable law, Contractor and each Subcontractor shall keep an accurate record showing the names and occupation of all laborers, workers and mechanics employed by them, and also showing the actual hourly wages paid to each such individual, which record shall be open at all reasonable hours to inspection by the Owner, its officers and agents, and to agents of the Illinois Department of Labor. The Contractor and each Subcontractor hereby agree, jointly and severally, to defend, indemnify and hold harmless the Owner from any and all claims, demands, liens or suits of any kind or nature whatsoever (including suits for injunctive relief) by the Illinois Department of Labor under the Illinois Prevailing Wage Act, or by any laborer, worker or mechanic employed by the Contractor or the Subcontractor who alleges that he has been paid for his services in a sum less than prevailing wage rates required by Illinois law. The Owner agrees to notify the Contractor or Subcontractor of the pendency of any such claim, demand, lien or suit. Contractor must pay prevailing wages in effect at time labor is performed."

D. **3.6 TAXES**

1. Delete Section 3.6 in its entirety and replace with the following:
   a. "**§ 3.6 TAXES**
   b. The Owner is exempt from the Illinois Use Tax Act and the Retailer's Occupation Tax. Certificate will be furnished upon request. Any taxes for which the Owner is not exempt shall be paid by the Contractor."

E. **3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS**

1. Delete Section 3.7.4 in its entirety.

F. **§ 3.9 SUPERINTENDENT**

1. After the last sentence in Section 3.9.1, add the following:
   a. "The Superintendent shall have knowledge of, and control over, the entirety of the Work, and upon request of the Owner or Architect, the Superintendent shall communicate directly to the Owner."

G. **3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES**

1. Delete Section 3.10.1 in its entirety and replace with the following:
   a. "**§ 3.10.1** The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall indicate the proposed completion dates for the various subdivisions of the Work, as well as the totality of the Work. The schedule shall be updated every thirty (30) days and submitted to Architect with Contractor's Applications for Payment. Each schedule shall contain a comparison of actual progress with the estimated progress for such point in time stated in the original schedule. If any schedule submitted sets forth a date for Completion for the Work or any phase of the Work beyond the date(s) of Completion established in the Contract (as the same may extended as provided in the Contract Documents), then Contractor shall submit to Architect and Owner for their review and approval a narrative description of the means and methods which Contractor intends to employ to expedite the progress of the Work to ensure timely completion of the various phases of the Work as well as the totality of the Work. To ensure such timely completion, Contractor shall take all necessary action including, without limitation, increasing the number of personnel and labor on the Project and implementing overtime and double shifts. In that event, Contractor shall not be entitled to an adjustment in the Contract Sum of the schedule. The Owner may, in its discretion, choose to withhold any payment due the Contractor until an updated schedule is submitted. The Owner's or Architect's failure to object to a submitted schedule that exceeds time limits current under the Contract Documents shall not relieve the Contractor of its obligations to meet the time limits in the Contract Documents, nor shall it make the Owner or Architect liable for any of the Contractor's damages incurred as a result of increased construction time or not meeting the time limits in the Contract Documents. Similarly, the Owner's or Architect's failure to object to a Contractor's schedule showing completion in advance of the time limits in the Contract Documents shall not create or infer any rights in favor of the Contractor for acceleration of the Work."

H. **3.18 INDEMNIFICATION**

1. Delete Section 3.18.1 and replace with the following:

a. "**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall waive any right of contribution against the Owner and shall indemnify and hold harmless the Owner and the Architect and their officers, officials, employees, volunteers and agents from and against all claims, damages losses and expenses, including, but not limited to, legal fees (attorney's and paralegal's fees, expert fees and court costs), arising out of or resulting from the performance of the Contractor's work provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or injury to or destruction of property, other than the work itself, including the loss of use resulting therefrom to the extent it is caused in whole or in part by any wrongful or negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable. Such obligation shall not be construed to negate, abridge or otherwise reduce any other right to indemnity which the Owner would otherwise have. The Contractor shall similarly, protect, indemnify and hold and save harmless, the Owner, its officers, officials, employee, volunteers and agents against and from any and all claims, costs, causes, actions and expenses, including, but not limited to, legal fees, incurred by reason of Contractor's breach of any of its obligations under, or Contractor's default of any provisions of the Contract."

2. Add new Section 3.18.1.1 as follows:
   a. "**§ 3.18.1.1** The Contractor and every subcontractor expressly waive all so-called Kotecki rights under the Illinois workers' compensation statutes even though owner has retained all such rights."

1.05 ARTICLE 7 CHANGES IN THE WORK

A. 7.1 GENERAL

1. Add new Section 7.1.4 as follows:
   a. "**§ 7.1.4** For adjustments to the Contract Sum based on other than the unit price method, overhead, profit and general conditions combined shall be calculated at the following percentages of the cost attributable to the change in the work:
      1) **.1** For the Contractor, for any Work performed by the Contractor's own forces: 10 percent of the cost.
      2) **.2** For the Contractor, for Work performed by his Subcontractor: 5 percent of the amount due the Subcontractor.
      3) **.3** For each Subcontractor or Sub-subcontractor involved, for any Work performed by the Subcontractor's own forces: 10 percent of the cost.
      4) **.4** For each Subcontractor, for Work performed by his sub-contractors: 5 percent of the amount due the Sub-subcontractor.
      5) **.5** All proposals, except those less than $200.00, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also. In no case will a change involving over $200.00 be approved without such itemization."

B. 7.3 CONSTRUCTION CHANGE DIRECTIVES

1. In the first sentence of Section 7.3.7, delete the words: "as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount." and replace with the words: "in accordance with Section 7.1.4".

1.06 ARTICLE 9 PAYMENTS AND COMPLETION

A. 9.3 APPLICATIONS FOR PAYMENT

1. Add new Section 9.3.1.3 as follows:
   a. "**§ 9.3.1.3** Until substantial completion, the Owner shall pay 90 percent of the amount due the Contractor on account of progress payments."
2. Add new Section 9.3.2.1 as follows:
   a. "**§ 9.3.2.1** In accordance with Section 9.3.2, the Contractor shall be permitted to make written petition to the Owner requesting payment for 75% of the cost of materials and equipment suitably stored off the site at a location agreed upon in writing between the Owner and the Contractor. In order to receive such payment, title to the materials and/or equipment must pass to the Owner; the materials and/or equipment must be stored in a protected, insured facility agreed to by the Owner, with the Owner named as an additional insured; and all storage costs and costs associated with handling and transporting the materials and/or equipment to the Project site must be paid for by the Contractor."

B. 9.8 SUBSTANTIAL COMPLETION

1. Delete the last sentence of Section 9.8.5 and replace with the following: "The payment shall be sufficient to increase the total payments to 95 percent of the Contract sum, less such amounts as the Architect shall determine for incomplete Work and unsettled claims."

C. 9.10 FINAL COMPLETION AND FINAL PAYMENT

1. Delete Section 9.10.4 in its entirety.

1.07 ARTICLE 11 INSURANCE AND BONDS

A. 11.1 CONTRACTOR'S LIABILITY INSURANCE

1. Delete the semicolon at the end of Clause 11.1.1.1 and append the following: ", including private entities performing work at the site and exempt from the coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the project;"
2. Delete the semicolon at the end of Clause 11.1.1.2 and append the following: ", or persons or entities excluded by statute from the requirements of Clause 11.1.1.1 but required by the contract documents to provide the insurance required by that clause;"
3. Delete the semicolon at the end of Clause 11.1.1.6 and append the following: ", and coverage should be written on a comprehensive automobile policy which will include coverage for owned, non-owned and hired motor vehicles."
4. Add new Section 11.1.2.1 as follows:
   a. "**§ 11.1.2.1** The insurance required by Section 11.1.1 shall be written for not less than the following limits, or greater if required by law:
      1) Workers' Compensation:
         a) State: Statutory Limit.
         b) Applicable Federal (e.g., Longshoremen's): Statutory
         c) Employer's Liability
            (1) $500,000.00 Per Accident
            (2) $500,000.00 Disease, Policy Limit
            (3) $500,000.00 Disease, Each Employee
      2) If written under Comprehensive General Liability Policy Form (including sub-lines specified in Clause 11.1.1.8):

a) Bodily Injury:
(1) $1,000,000.00 Per Occurrence
(2) $2,000,000.00 Aggregate Per Project
b) Property Damage:
(1) $500,000.00 Per Occurrence

3) If written under Commercial General Liability Policy Form:
a) $2,000,000.00 General Aggregate Per Project
b) $1,000,000.00 Products Completed Operations Aggregate
c) $1,000,000.00 Personal and Advertising Injury
d) $1,000,000.00 Per Occurrence

4) Business Automobile Liability (including owned, non-owned and hired vehicles):
a) Bodily Injury and Property Damage Combined:
(1) $1,000,000.00 Per Occurrence

5. Add new Sections 11.1.2.2 through 11.1.2.6 as follows:

a. "**§ 11.1.2.2** Liability insurance should be written on the comprehensive general liability basis, and shall include, but not be limited to the following sub-lines:
1) Premises and Operations including x, c, u coverages (explosion, collapse, underground).
2) Products and Completed Operations.
3) Independent Contractor's Protective.
4) Broad Form Comprehensive General Liability Endorsement:
a) Contractual Liability, including contractors obligation under Section 3.18.
b) Personal Injury & Advertising Injury Liability
c) Premises Medical Payments
d) Host Liquor Law Liability
e) Fire Legal Liability - Real Property
f) Broad Form Property Damage Liability (including completed Operations)
g) Incidental Medical Malpractice Liability
h) Non-owned Watercraft Liability
i) Limited Worldwide Liability
j) Additional Persons Insured, including employees for personal and advertising injury.
k) Extended Bodily Injury Liability
l) Automatic Coverage - Newly acquired Organizations (90 days)

b. **11.1.2.3** If liability insurance is written under the new simplified form Commercial General Liability, the above listed coverages should be included.

c. **11.1.2.4** If the General Liability coverages are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the contract; the termination date of the policy shall be no earlier than the termination date of coverages required to be maintained after final payment, certified in accordance with Section 9.10.2, and extended period endorsement "Supplemental Tail", must be purchased."

d. **11.1.2.5** All policies of insurance purchased or maintained in fulfillment of Section 11.1.1 shall name the Owner and Architect as additional insureds on a primary and noncontributory basis thereunder.

e. **11.1.2.6** The Contractor shall provide the Owner with the Original policy and shall furnish the Architect with a memorandum copy of said policy. The additional insureds on the Contractor's Liability policy shall be:

Oakton College

1600 East Golf Road
Des Plaines, Illinois 60016

KLUBER, INC.
41 W. Benton Street
Aurora, Illinois 60506

6. In Section 11.1.3:
   a. In the second sentence, delete the words "Section 11.1" and replace with the words "Article 11".
   b. Append the following sentence to the end of the Section:
      1) "On the Certificate of Insurance, delete in the cancellation provision the following words, "Endeavor to" and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives"."
7. Add new Section 11.1.3.1 as follows:
   a. "**§ 11.1.3.1** Failure of the Owner to demand any certificate, policy, endorsement or other evidence of full compliance with the insurance requirements of Article 11 or failure of the Owner to identify a deficiency from evidence that is provided shall not be construed as a waiver of the Contractor's obligation to maintain such insurance. The Contractor agrees that the obligation to provide the insurance required by these documents is solely its responsibility and that this is a requirement which cannot be waived by any conduct, action, inaction or omission by the Owner."
8. Add new Section 11.1.5 as follows:
   a. "**§ 11.1.5** Nothing contained in the insurance requirements of the Contract Documents is to be construed as limiting the liability of the Contractor, the liability of any Subcontractor or any tier or either of their respective insurance carriers. The Owner, does not in any way, represent that the coverages or limits of insurance specified is sufficient or adequate to protect the Owner, Contractor, Architect, or any Subcontractor's interests or liabilities but are merely at minimums. The obligation of the Contractor, the Architect, and any Subcontractor of any tier to purchase insurance, shall not, in any way, limit their obligations to the Owner in the event the Owner should suffer an injury or loss in excess of the amount recoverable through insurance, or any loss or portion of the loss which is not covered by either the Contractor's or any Subcontractor's insurance."

B. **11.3 PROPERTY INSURANCE**

1. In the last sentence of Section 11.3.1, after "Owner, " insert "the Architect,".
2. Delete Section 11.3.1.2. in its entirety.
3. Delete Section 11.3.1.3. in its entirety.
4. Delete Section 11.3.3 in its entirety.
5. Delete Section 11.3.5 in its entirety.
6. Delete Section 11.3.6 in its entirety.
7. Delete Section 11.3.7 in its entirety.
8. In the third sentence of Section 11.3.9 delete the phrase ", or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor.".

C. **11.4 PERFORMANCE AND PAYMENT BOND**

1. Delete Section 11.4.1 in its entirety and replace with the following:

a. "**§ 11.4.1** The Contractor, before commencing the Work, shall furnish a Performance Bond and a Labor and Material Bond. The Performance Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the faithful performance of the obligation of the Contract Documents, and the Labor and Material Payment Bond shall be in an amount equal to 100% of the full amount of the Contract Sum as security for the payment of all persons performing labor and furnishing materials in connections with the Contract Documents. Such bonds shall be on standard AIA Documents, issued by the American Institute of Architects, shall be issued by a surety satisfactory to the Owner, and shall name the Owner as primary co-obligee.

b. **11.4.1.1** The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds shall be furnished.

c. **11.4.1.2** The Contractor shall require the attorney-in-fact who executed the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney."

2. Add new Section 11.4.3 as follows:
   a. "**§ 11.4.3** Whenever the Contractor shall be and is declared by Owner to be in default under the Contract, the Surety and the Contractor are each responsible to make full payment to the Owner or any and all extra Work incurred by the Architect as a result of the Contractor's default, and to pay to Owner all attorney's fees and court costs incurred by Owner as a result of the Contractor's default, and in protecting Owner's rights under the Agreement to remedy Contractor's default."
3. Add new Section 11.4.4 as follows:
   a. "**§ 11.4.4** The Contractor shall (i) furnish all Surety Company's bonds through Surety Company's local agents approved by and/or as directed by Owner; (ii) fully covered and guarantee with said bond the faithful performance and completion of the entire Contract, including without limitation, the faithful performance of prevailing wage requirements; and (iii) guarantee with said bond payment in all cases by the Contractor or by the Surety Company for all labor performed, material and supplies furnished with the entire Work in the Contract. Said Bond shall remain in full force and effect during the entire period of all general guarantees given by the Contractor with the Contract as called for in the Specifications and Contract, except in cases where other bonds are specifically called for in the specifications and Contract in connection with special guarantees."

D. Add new Section 11.5 as follows:
   1. "**§ 11.5 OWNERS AND CONTRACTORS PROTECTIVE LIABILITY INSURANCE**

2. **11.5.1** The Contractor shall purchase and maintain Owners and Contractors Protective (OCP) liability insurance covering the Owner's contingent liability for claims which may arise from operations under the Contract and that will protect the Owner and the Architect and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work specifically pertaining to the Illinois Structural Works Act, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the work itself) including the loss of use resulting therefrom and (2) is cause in whole or in part by any negligent act of omission of the Contractor, and Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, including by assignment, regardless of whether or not it is caused in part by a party to whom insurance is afforded pursuant to this paragraph. The minimum Per Occurrence and Aggregate limits of liability purchased for such coverage shall be equal, respectively, to the Per Occurrence and Aggregate limits required for the Contractor's Liability insurance, as listed in Section 11.1.2.1, above.
3. **11.5.2** In any and all claims against the Owner or the Architect or any of their agents or employees by any employee of the Contractor, any other contractor assigned to the Contractor, Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the insurance obligation under this Section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under Workmen's Compensation Acts, disability benefit acts or other employee benefit acts.
4. **11.5.3** The insurance obligations of the Contractor under this Section shall not extend to the liability of the Architect, his agents or employees arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications or (2) the giving of or failure to give directions or instruction by the Architect, his agents or employees provided that such giving or failure to give is the primary cause of the injury damage.
5. **11.5.4** The Contractor shall provide the Owner with the Original policy and shall furnish the Architect with a memorandum copy of said policy. The named insured on the Owners and Contractors Protective (OCP) liability policy shall be:

   Oakton College
   1600 East Golf Road
   Des Plaines, Illinois 60016

   KLUBER, INC.
   41 W. Benton Street
   Aurora, Illinois 60506

1.08 ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

A. § 12.2.2 AFTER SUBSTANTIAL COMPLETION

1. Delete Sections 12.2.2.1, 12.2.2.2 and 12.2.2.3 in their entireties and replace with the following:

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

b. **12.2.2.2** The two-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.

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

2. Delete Section 12.2.2.5 in its entirety and replace with the following:

a. "**§ 12.2.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for correction of Work as described in Section 12.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced nor the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work."

1.09 ARTICLE 13 MISCELLANEOUS PROVISIONS

A. **13.6 INTEREST**

1. Delete Section 13.6 in its entirety. All references to interest payments throughout the Contract Documents are hereby voided.

B. Add Section 13.8 as follows:

1. "**§ 13.8 REGULATIONS**
2. **13.8.1** The Contractor or Subcontractor warrants that he is familiar with and he shall comply with Federal, State and local laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Contract including without limitation Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours. No plea of misunderstanding or ignorance thereof will be considered.
3. **13.8.2** Whenever required, the Contractor or Subcontractor shall furnish the Architect and Owner with satisfactory proof of compliance with said Federal, State and local laws, statutes, ordinances, rules, regulations, orders, and decrees.

4. **13.8.3** Each bidder shall carefully examine the Occupational Safety and health Act as issued by the Federal Register (OSHA), and the specific regulations governing procedures, techniques, safety precautions, equipment design, and the configuration of the same as required under this Act and each bidder agrees as evidenced by his submission of a bid to comply with all terms of the Act and to perform and complete in a workmanlike manner all work required in full compliance with said Act.
5. **13.8.4** Each bidder agrees as evidenced by his submission of a bid to comply with all terms of the Equal Employment Opportunity Clause of the Illinois Fair Employment Practices Commission.
6. **13.8.5** At all times Contractor shall remain in compliance with the Illinois Public Works Employment Discrimination Act (775 ILCS 10/1, et seq.,) and the Illinois Human Rights Act (775 ILCS 5/2-101, et seq.,) and in addition shall at all times comply with Section 2-105 of the Illinois Human Rights Act.
7. **13.8.6** By execution of this Contract, the Contractor understands, represents and warrants to the Owner that the Contractor and its Subcontractors (for which the Subcontractor takes responsibility to insure that they comply with the above-mentioned Acts) are in compliance with all requirements provided by the Acts set forth in Article 13 and that they will remain in compliance for the entirety of the Work. A violation of any of the Acts set forth in this Article is cause for the immediate cancellation of the Contract. However, any forbearance or delay by the Owner in canceling this Contract shall not be considered as, and does not constitute, Owner's consent to such violation and a waiver of any rights the Owner may have, including without limitation, cancellation of this Contract."

1.10 ARTICLE 15 CLAIMS AND DISPUTES

A. **15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES**
   1. Delete Section 15.1.6 in its entirety.

B. **15.2 INITIAL DECISION**
   1. Delete Section 15.2.1 in its entirety and replace with the following:
      a. "**§ 15.2.1** Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9 and 11.3.10, may be referred to the Initial Decision Maker for action. A decision by the Initial Decision Maker shall not be binding and shall not be required as a condition precedent to litigation."

END OF SECTION

SECTION 01 10 00
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES.

B. Owner's Name: OAKTON COLLEGE.

C. Architect/Engineer's Name: Kluber Architects + Engineers.

D. The Project consists of the alteration of exterior doors, frames and hardware at Skokie, Des Plaines, and Lee Center. Will include providing low voltage access controls, door sensors and associated electrical.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 52 00 - Agreement Form.

1.03 OWNER OCCUPANCY

A. Owner intends to occupy the Project upon Substantial Completion.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Use of site and premises by the public.

B. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 20 00
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Correlation of Contractor submittals based on changes.

E. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Additional requirements for progress payments, final payment, changes in the Work.

B. Section 00 73 00 - Supplementary Conditions: Percentage allowances for Contractor's overhead and profit.

C. Section 01 78 00 - Closeout Submittals: Project record documents.

D. Section 01 77 00 - Closeout Procedures: Final Payment.

1.03 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect/Engineer for approval.

C. Forms filled out by hand will not be accepted.

D. Submit Schedule of Values to the Architect/Engineer at earliest possible date, but no later than 14 days prior to first Pay Request Meeting.
   1. After review by the Architect/Engineer, revise and resubmit Schedule as directed.

E. Format: Utilize the Table of Contents of this Project Manual as a format for the listing of the Work.

F. Identify as separate line items on the Schedule the costs for the following items:
   1. Bonds.
   2. Insurance.
   3. Site Mobilization.
   4. Construction Submittals.
   5. General Conditions.
   6. Demonstration and Training.
   7. Closeout Submittals.
   8. Contractor's overhead and profit.

G. Submit Schedule of Values in sufficient detail for the Architect/Engineer to use in evaluation of Applications for Payment.

1. Itemize the cost of the work of:
   a. Contractor's materials from stock.
   b. Contractor's own shop labor.
   c. Contractor's own field labor.
   d. Subcontractors' materials from stock.
   e. Subcontractors' shop labor.
   f. Subcontractors' field labor.
   g. Suppliers of products and equipment.
   h. Architectural Hardware Consultant field inspection per Section 08 71 00.

H. Revise Schedule of Values to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect/Engineer for approval.

D. Forms filled out by hand will not be accepted.

E. For each item, provide a column for listing each of the following:
   1. Item Number.
   2. Description of work.
   3. Scheduled Values.
   4. Previous Applications.
   5. Work in Place and Stored Materials under this Application.
   6. Authorized Change Orders.
   7. Total Completed and Stored to Date of Application.
   8. Percentage of Completion.
   9. Balance to Finish.
   10. Retainage.

F. Execute certification by signature of authorized officer.

G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.

I. Submit one pencil/draft copy of each Application for Payment to the Architect/Engineer at least 7 days prior to the due date for the submission of the Application.

J. Contractor or Architect/Engineer may schedule a Pay Request Meeting to review the pencil/draft copy of the Application for agreement with the progress of the Work.

K. After receipt of Architect/Engineer's review comments, submit three final copies, signed and notarized, of each Application for Payment.

L. Include the following with the application:

1. Transmittal letter as specified for submittals in Section 01 30 00.
2. Construction progress schedule, revised and current as specified in Section 01 30 00.
3. Contractor's partial waiver of lien in the amount of the Application for Payment as well as trailing partial waivers of lien for subcontractors and suppliers who were included in the previous Application for Payment, to the extent of that payment.
   a. When an Application shows completion of a subcontractor or supplier item, submit a final or full waiver for that item.
   b. Waivers of lien shall be submitted on forms and executed in a manner acceptable to the Owner.
4. Email confirmations and copies of certified transcripts of payroll records accompanying those confirmations from the Illinois Department of Labor for the Contractor and for all Subcontractors and Sub-subcontractors employed on the Project who performed work on the Project during the Payment Period.
   a. Contractor shall assemble his and all subcontractor and sub-subcontractor records prior to submitting each Application for Payment.
   b. Applications for Payment submitted without IDOL confirmation emails and transcripts or with missing IDOL confirmation emails or transcripts will result in payment being delayed until the Contractor complies fully with the requirements set forth in the preceding paragraphs.
5. Affidavits attesting to products or equipment suitably stored off-site in a bonded warehouse. Payments for materials stored off-site shall be conditioned upon submission of bills of sale, applicable insurance, and any other documentation or procedures satisfactory to the Owner to establish the Owner's title to such materials, or otherwise protect the Owner's interest.

M. When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.05 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.

B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect/Engineer will issue instructions directly to Contractor.

C. For other required changes, Architect/Engineer will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

D. For changes for which advance pricing is desired, Architect/Engineer will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within ten (10) days.

E. Contractor may propose a change by submitting a request for change to Architect/Engineer, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 60 00.

F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
   1. For change requested by Architect/Engineer for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
   2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect/Engineer.
   3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
   4. For change ordered by Architect/Engineer without a quotation from Contractor, the amount will be determined by Architect/Engineer based on the Contractor's substantiation of costs as specified for Time and Material work.

G. Substantiation of Costs: Provide full information required for evaluation.
   1. On request, provide the following data:
      a. Quantities of products, labor, and equipment.
      b. Taxes, insurance, and bonds.
      c. Overhead and profit.
      d. Justification for any change in Contract Time.
      e. Credit for deletions from Contract, similarly documented.
   2. Support each claim for additional costs with additional information:
      a. Origin and date of claim.
      b. Dates and times work was performed, and by whom.
      c. Time records and wage rates paid.
      d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
   3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

H. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

K. Promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:

1. All closeout procedures specified in Section 01 70 00.

C. The submittal of Final Waiver of Lien and the acceptance of the final payment by the Contractor shall be held to be a waiver of any and all claims against the Owner arising from, out of, or in any connection with the Contract.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Preconstruction meeting.

C. Progress meetings.

D. Construction progress schedule.

E. Requests for Interpretation (RFI) procedures.

F. Submittals for review, information, and project closeout.

G. Number of copies of submittals.

H. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Dates for applications for payment.

B. Section 01 60 00 - Product Requirements: General product requirements.

C. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.

D. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01 70 00 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Make the following types of submittals to Architect/Engineer:
   1. Requests for Interpretation (RFI).
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Manufacturer's instructions and field reports.
   5. Applications for payment and change order requests.
   6. Progress schedules.
   7. Coordination drawings.
   8. Correction Punch List and Final Correction Punch List for Substantial Completion.
   9. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. Architect/Engineer will schedule a meeting after Notice of Award.

B. Attendance required:
   1. Owner.
   2. Architect/Engineer.
   3. Contractor.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.
   2. Submission of executed bonds and insurance certificates.
   3. Distribution of Contract Documents.
   4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   5. Designation of personnel representing the parties to Contract and Architect/Engineer.
   6. Procedures and processing of field decisions, Submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

A. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

B. Attendance Required:
   1. Contractor.
   2. Owner.
   3. Architect/Engineer.
   4. Contractor's superintendent.
   5. Major subcontractors.

C. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of Submittals schedule and status of Submittals.
   6. Review of RFIs log and status of responses.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Maintenance of quality and work standards.
   11. Effect of proposed changes on progress schedule and coordination.
   12. Other business relating to work.

D. Record minutes and distribute copies within 2 days after meeting to participants, with copies to Architect/Engineer, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. If preliminary schedule requires revision after review, submit revised schedule within 7 days.

B. Submit updated schedule with each Application for Payment.

3.04 REQUESTS FOR INFORMATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit an RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.
      a. Use AIA G716 - Request for Information .
   3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
   2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
      a. Approval of submittals (use procedures specified elsewhere in this section).
      b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
      c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
      d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
   3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
   4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
      a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect/Engineer, and any of its consultants, due to processing of such RFIs.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.

1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect/Engineer's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

H. Review Time: Architect/Engineer will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 3:00 PM will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect/Engineer within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.05 SUBMITTAL SCHEDULE

A. Submit to Architect/Engineer for review a schedule for submittals in tabular format.

1. Submit at the same time as the preliminary schedule.
2. Coordinate with Contractor's construction schedule and schedule of values.
3. Format schedule to allow tracking of status of submittals throughout duration of construction.
4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
    a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.06 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
    1. Product data.
    2. Shop drawings.
    3. Samples for selection.

B. Submit to Architect/Engineer for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. After review, provide copies and distribute in accordance with Submittal PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

3.07 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
    1. Design data.
    2. Certificates.
    3. Inspection reports.
    4. Manufacturer's instructions.
    5. Other types indicated.

B. Submit for Architect/Engineer's knowledge as contract administrator or for Owner.

3.08 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
    1. Project record documents.
    2. Operation and maintenance data.
    3. Warranties.
    4. Bonds.
    5. Other types as indicated.

D. Submit for Owner's benefit during and after Project completion.

3.09 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:
   1. Submit via email in Adobe PDF electronic file format at native sheet size and right-side up. Architect/Engineer will return via email a reviewed copy in Adobe PDF electronic file format. Files not properly sized and rotated will be rejected. Illegible files will be rejected.

B. Documents for Information: Submit via email in Adobe PDF electronic file format. Submitted documents are for Architect/Engineer's information and reference only, and will not be reviewed or returned.

3.10 SUBMITTAL PROCEDURES

A. General Requirements:
   1. Use a single transmittal for related items.
   2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
   3. Transmit using approved form.
   4. Number each submittal. Prefix the submittal number with the Specification Section number to which the submittal pertains. For revised submittals use original number and a sequential alphanumeric suffix. **Items submitted without a Specification Section number, or with an incorrect Specification Section number will delay the review process.**
   5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number, article and paragraph, as appropriate on each copy.
   6. Correlate submitted items with specified products; clearly indicate the specified product that corresponds to each submitted item. **Submitted items not clearly correlated with specified items will delay the review process.**
   7. When options or optional features available for a Product are indicated in a Submittal, and selections for those options/features are indicated in the Contract Documents, identify on the Submittal the selection indicated in the Contract Documents. **Submittals that fail to identify specified options or optional features may be returned marked "Rejected" or "Revise and Resubmit".**
   8. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
      a. Submittals from sources other than the Contractor, or without Contractor's transmittal will not be acknowledged, reviewed, or returned.
   9. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
      a. Deliver submittals to Architect/Engineer at business address.
   10. Schedule submittals to expedite the Project, and coordinate submission of related items.
      a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
      b. For sequential reviews involving Architect/Engineer's consultants, Owner, or another affected party, allow an additional 7 days.

11. Clearly identify variations from the Contract Documents. Regardless of the type of variation, Contractor is solely responsible for errors in the field or performance issues that arise from Submittal variations from the requirements of the Contract Documents if those variations were not expressly noted to specifically identify for and describe to the reviewer the nature of the variation from the Contract Documents.
12. Provide space for Contractor's review stamp and a 4 inch x 3 inch clear space for Architect/Engineer's review stamp.
13. Promptly return submittals marked "Rejected" or "Revise and Resubmit" to originating subcontractor supplier, and faithfully ensure the prompt resubmittal of the correct or revised information.
14. When revised for resubmission, identify all changes made since previous submission. Use clouds, highlights or other means acceptable to Architect/Engineer. **Resubmittals that do not clearly identify all changes may be delayed and/or returned to the Contractor unreviewed.**
15. Contractor is entitled to one (1) resubmittal of each Submittal For Review or Submittal For Project Closeout rejected by Architect/Engineer or returned by Architect/Engineer for further action. Thereafter, Contractor shall pay the cost of all further Architect/Engineer reviews of any Submittal For Review or Submittal for Project Closeout, at a rate of $200.00/hour. Cost of such further reviews will be deducted from the Contract Sum by Change Order.
16. Promptly distribute and coordinate the requirements of reviewed submittals with affected parties. Instruct parties to promptly report inability to comply with requirements.
17. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
18. Submittals not requested will be returned "Not Reviewed".

B. Product Data Procedures:
   1. Submit only information required by individual specification sections.
   2. Collect required information into a single submittal.
   3. Do not submit (Material) Safety Data Sheets for materials or products.

C. Shop Drawing Procedures:
   1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
   2. Use of reproductions of the Contract Documents in digital data form to create shop drawings is only permitted as defined above in Article 3.10.
   3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Submittal reviews may be delayed and/or Submittals may be returned marked "Rejected" or "Revise and Resubmit" for any of the following reasons:
   1. Submittals submitted outside the scheduled dates of the Submittal Schedule.
   2. Submittals are incomplete or are missing information.
   3. Submittals are not submitted in accordance with procedures outlined in this Section, including, but not limited to:
      a. Specification Section number not indicated on submittal or transmittal.
      b. Contractor's review stamp missing.
      c. Submitted items not correlated with specified products.
      d. Re-submitted items not clearly identifying changes.

3.11 SUBMITTAL REVIEW

A. Submittals for Review: Architect/Engineer will review each submittal, and approve, or take other appropriate action.

B. Submittals for Information: Architect/Engineer will not acknowledge receipt, and take no other action.

C. Architect/Engineer's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
   1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

D. Architect/Engineer's actions on items submitted for review:
   1. Authorizing purchasing, fabrication, delivery, and installation:
      a. "No Exception Taken", or language with same legal meaning.
         1) Resubmission is not required or requested.
         2) Resubmitted items will not be acknowledged.
      b. "Make Corrections Noted", or language with same legal meaning.
         1) Resubmission is not required or requested.
         2) Resubmitted items may be returned marked "Not Requested, Not Reviewed'.
   2. Not Authorizing fabrication, delivery, and installation:
      a. "Revise and Resubmit".
         1) Resubmit revised item, with review notations acknowledged and incorporated.
         2) Clearly identify all revisions.
         3) Non-responsive resubmittals may be rejected.
      b. "Rejected".
         1) Submit item complying with requirements of Contract Documents.
      c. "Submit Specified Item".
         1) Submit item complying with requirements of Contract Documents.

END OF SECTION

ELECTRONIC DATA TRANSFER CONSENT FORM

Project Name: EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES

Project No.: 22-315-1435

Owner: OAKTON COLLEGE

Your Work: _____

KLUBER, INC. (hereinafter referred to as "Kluber") an Illinois corporation, is providing electronic data to you solely at your request and for your convenience. By accepting and opening any of the electronic data files, you agree that Kluber bears no liability for the data or its transmission to you and that you are solely liable for any and all claims referring or relating to any and all products you, or your Subcontractors, may generate with the data.

You acknowledge that you have a limited non-exclusive license to use the information solely in connection with your work on the project captioned above, and that Kluber retains all rights, including copyright, to the data.

Acknowledged by: _____ _____
(Printed Name) (Signature)

Company: _____

Date: _____ Email: _____

Architectural Floor Plans are transmitted for the contractors' use as backgrounds for shop drawings and as-built drawings, and, as such, contain graphic information for column grid, walls, floors, stairs, doors, windows, room numbers, ceiling grid, lights, diffusers and sprinkler heads where indicated on Bid Documents. Plans do not contain title blocks, keynotes, schedules, mechanical ductwork and equipment, electrical device symbols, circuit numbers and home runs, plumbing equipment, piping runs and riser diagrams, and architectural/engineering text and details. Plans depict entire floors and are not formatted, partial plans as depicted in the Bidding Documents. Files are provided in R2013 .DWG format.)

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Sequencing and scheduling of the work with testing and inspections.

C. Control of installation.

D. Mock-ups.

E. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 01 41 00 - Regulatory Requirements.

B. Section 01 42 00 - References.

C. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Design Data: Submit for Architect/Engineer's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect/Engineer, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect/Engineer.

D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.04 REGULATORY REQUIREMENTS - SEE SECTION 01 41 00

1.05 REFERENCES AND STANDARDS - SEE SECTION 01 42 00

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Architect/Engineer will use accepted mock-ups as a comparison standard for the remaining Work.

D. Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect/Engineer.

3.03 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Owner, it is not practical to remove and replace the work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 41 00
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General.

B. Definitions.

C. Quality Assurance.

D. Regulatory Requirements.

1.02 RELATED SECTIONS

A. Section 01 10 00 - Summary.

B. Section 01 42 00 - References.

1.03 GENERAL

A. Comply with all applicable laws, rules, regulations, codes and ordinances.

B. If the Contractor observes that the Contract Documents may be at variance with specified codes, notify the Architect/Engineer immediately. Architect/Engineer shall issue all changes in accordance with the General Conditions.

C. It shall not be the Contractor's primary responsibility to make certain that the Contract Documents are in accordance with all applicable laws, rules and regulations, however, when the Contractor performs work knowing or having reason to know that the work in question is contrary to applicable laws, rules, and regulations, and fails to notify the Architect/Engineer, the Contractor shall pay all costs arising therefrom.

1.04 DEFINITIONS

A. Definitions:
   1. Codes: Codes are statutory requirements, rules or regulations of governmental entities.
   2. Standards: Standards are requirements that have been established as accepted criteria, set general consent.

1.05 QUALITY ASSURANCE

A. The Architect/Engineer has designed the project to applicable code requirements and has copies of said codes available for the Contractor's inspection.

B. The Contractor shall:
   1. Ensure that copies of codes and standards referenced herein or specified in individual specifications sections are available to Contractor's personnel, agents, and Sub-Contractors.
   2. Ensure that Contractor's personnel, agents, and Sub-Contractors are familiar with the workmanship and requirements of applicable codes and standards.

1.06 REGULATORY REQUIREMENTS

A. Source and Requirements: Verify amendments with local code officials.

1. Local code requirements:
   a. ICC International Building Code, 2015 Edition.
   b. ICC International Fire Code, 2015 Edition.
   c. ICC International Property Maintenance Code, 2015 Edition.
   d. National Electrical Code, 2014 Edition.
2. State code requirements:
   a. Capital Development Board (CDB):
      1) Illinois Accessibility Code, 2018 Edition.
      2) Illinois Energy Conservation Code (ICC International Energy Conservation Code, 2018 Edition, with State of Illinois modifications.
   b. Illinois Department of Labor (IDOL): Safety Glazing Materials Act - Illinois Revised Statutes, chap. 111 1/2, paragraph 3101, et seq.
   c. Illinois Environmental Protection Agency (IEPA):
      1) Air-Pollution Standards.
      2) Noise Pollution Standards.
      3) Water Pollution Standards.
      4) Public Water Supplies
      5) Solid Waste Standards.
      6) Illinois Recommended Standards for Sewage Works (Illinois Administrative Code, Title 35, Subtitle C, Chapter II, Part 370).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 42 00
REFERENCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Drawing symbols, abbreviations and acronyms.

B. Definitions of terms used throughout the Contract Documents.

C. Explanation of specification format and content.

D. Requirements relating to referenced standards.

E. Applicability of referenced standards.

F. List of industry organizations and certain of their respective documents.

1.02 DRAWING SYMBOLS AND CONVENTIONS

A. Abbreviations and graphic symbols are defined on the General Notes, Symbols & Abbreviations sheet of the drawings.

B. Generally, symbols used on the mechanical and electrical drawings conform to those recommended by ASHRAE, though, where appropriate, these symbols are supplemented by more specific symbols as recommended by ASME, ASPE, or the IEEE.

1.03 DEFINITIONS

A. Where the terms "indicated", "noted", "scheduled", "shown", or "specified" are used it is to help locate the reference; no limitation on location is intended except as specifically noted.

B. Where the terms "directed", "requested", "authorized", "approved", are used as in "directed by the Architect/Engineer", no implied meaning shall be construed to extend the Architect/Engineer's responsibilities into the Contractor's purview of construction supervision.

C. Where the term "approved" is used in conjunction with the Architect/Engineer's action on submittals, requests or applications it is limited to the duties of the Architect/Engineer as described in the Agreement, and the General and Supplemental Conditions of the Contract. Such use of the term "approval" shall not limit or release the Contractor from his responsibility to fulfill Contract requirements.

D. Where the term "regulations" is used it means all applicable statutes, laws, ordinances, and orders issued by authorities having jurisdiction, as well as construction industry standards, rules, or conventions that address performance of the Work.

E. The "Project Site" is the space available to the Contractor for performance of construction activities. The Project Site may be for the exclusive use of the Contractor and his activities or may be used in conjunction with others performing other construction or related activities on the Project. Unless the extent of the Project Site is indicated on the Drawings, means the limits of the area within the property line of the parcel on which the Project is located, subject to the limitations and restrictions of local ordinance and the discretion of the Owner.

F. Where the term "furnish" is used it means supply, deliver to, and unload and store at the Project Site until the Work is ready for the item to be assembled and incorporated into the Work.

G. Where the term "install" is used it is meant to describe operations at the Project Site to include uncrating, assembling, placing, anchoring, connecting to utilities, finishing, protecting, cleaning and all other similar operations required to fully incorporate an item into the Work.

H. Where the term “provide” is used it means “furnish and install” as defined above.

I. Where the term "refurbish" is used it means refinish, repair and otherwise restore to like-new condition.

J. Where the terms "remove" or "demolish" are used they mean safely disconnect from existing utilities, permanently extract from the Work and the Project Site, and legally dispose of off-site.

K. Where the terms "temporarily remove" or "salvage" are used they mean safely disconnect from existing utilities and carefully extract from the Work so as to prevent damage to the item and the Work.
   1. If the item is to be reinstalled or relocated as part of the Work, these terms also mean clean, adjust, lubricate and otherwise restore to best possible condition without repair or refinishing.
   2. Otherwise, these terms also mean clean item surfaces and turn over to the Owner for storage and possible future use.

L. Where the term "reinstall" is used it means the same as "install", with respect to a temporarily removed, salvaged or relocated item.

M. Where the term "relocate" is used it means temporarily remove and reinstall in a new location.

N. Where the phrase "salvage in place" is used it means protect in place so as to prevent damage while adjacent elements are demolished, restore to best possible condition without repair or refinishing, and modify as necessary to properly incorporate and integrate with the Work.

1.04 SPECIFICATION FORMAT AND CONTENT

A. These Specifications are based on the Construction Specification Institute's 49 Division format and numbering system.

B. Language used in the Specifications and other Contract Documents is an abbreviated type. Implied words and meanings will appropriately interpreted.

C. Requirements expressed in imperative and streamlined language are to be performed by the Contractor. At certain locations in the text, subjective language may be used to describe responsibilities that must be fulfilled indirectly by the Contractor or others.
   1. Whenever a colon (:) is used within a sentence or phrase, it shall be construed to mean the words "shall be".

D. Use of certain terms such as "carpentry" is not intended to imply that certain activities must be performed by accredited or unionized individuals of a corresponding generic name. The Specifications do, however, require that certain construction activities shall be performed by specialists who are recognized experts in the operations to be performed. Specialists shall be used for said activities, however the final responsibility for fulfilling the requirements of the Contract remains the Contractor's.

1.05 QUALITY ASSURANCE

A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue specified in this section, except where a specific date is established by applicable code.

C. Obtain copies of standards when required by the Contract Documents.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from the Architect/Engineer before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

1.06 APPLICABILITY OF INDUSTRY STANDARDS

A. Construction industry standards shall have the same force and effect as if bound or copied directly in the Contract Documents, except where more stringent requirements are specified. All such applicable standards are made a part of the Contract Documents by reference.
   1. Where compliance with two or more standards are referenced and conflicting requirements for quality or quantities occur, comply with the more stringent requirements. Refer questions regarding apparently conflicting standards to the Architect/Engineer for a decision before proceeding.
   2. The standard of quality or quantity levels specified, shown, or referenced shall be the minimum to be provided or performed. Refer questions regarding standards of minimum quality or quantity to the Architect/Engineer before proceeding.

1.07 CONSTRUCTION INDUSTRY ORGANIZATIONS AND DOCUMENTS

AA -- ALUMINUM ASSOCIATION, INC.

AAMA -- AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION

ANSI -- AMERICAN NATIONAL STANDARDS INSTITUTE

BHMA -- BUILDERS HARDWARE MANUFACTURERS ASSOCIATION

CPSC -- CONSUMER PRODUCTS SAFETY COMMISSION

DHI -- DOOR AND HARDWARE INSTITUTE

FM -- FACTORY MUTUAL RESEARCH CORPORATION

ICC -- INTERNATIONAL CODE COUNCIL, INC.

IEEE -- INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

IGCC -- INSULATING GLASS CERTIFICATION COUNCIL

IGMA -- INSULATING GLASS MANUFACTURERS ALLIANCE

ISDI -- INSULATED STEEL DOOR INSTITUTE

ISO -- INTERNATIONAL STANDARDS ORGANIZATION

MFMA -- METAL FRAMING MANUFACTURERS ASSOCIATION

NEBB -- NATIONAL ENVIRONMENTAL BALANCING BUREAU

NEMA -- NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

NPCA -- NATIONAL PAINT AND COATINGS ASSOCIATION

SDI -- STEEL DOOR INSTITUTE

SGCC -- SAFETY GLAZING CERTIFICATION COUNCIL

SIGMA - SEALED INSULATING GLASS MANUFACTURERS ASSOCIATION (See IGMA)

SSPC -- THE SOCIETY FOR PROTECTIVE COATINGS

UL -- UNDERWRITERS LABORATORIES INC.

1.08 UNITED STATES GOVERNMENT AND RELATED AGENCIES/DOCUMENTS

CFR -- CODE OF FEDERAL REGULATIONS

CPSC -- CONSUMER PRODUCTS SAFETY COMMISSION

EPA -- ENVIRONMENTAL PROTECTION AGENCY

FS -- FEDERAL SPECIFICATIONS AND STANDARDS (General Services Administration)

1.09 STATE GOVERNMENT AND RELATED AGENCIES/DOCUMENTS

CDB -- ILLINOIS CAPITAL DEVELOPMENT BOARD

IDOL -- ILLINOIS DEPARTMENT OF LABOR

IDPH -- ILLINOIS DEPARTMENT OF PUBLIC HEALTH

IEPA -- ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

OSFM -- OFFICE OF THE ILLINOIS STATE FIRE MARSHAL

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary telecommunications services.

B. Temporary sanitary facilities.

C. Temporary controls: Barriers and fencing.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

1.02 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. One (1) mobile cellular telephone for each of Contractor's and any Subcontractor's field personnel.

1.03 TEMPORARY SANITARY FACILITIES

A. Use of existing facilities is permitted. Contractor must maintain cleanliness of restroom

B. Maintain daily in clean and sanitary condition.

C. At end of construction, return facilities to same or better condition as originally found.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. On-site storage containers may be placed in the parking lot with prior Owner approval. Owner is not responsible for the security nor protection of this storage unit.

C. All on-site personnel of Contractor, Subcontractors and Suppliers must pass a background check, performed by the Owner or by an outside agency of the Owner's choosing.
   1. At least 7 days prior to a Contractor, Subcontractor or Supplier employee being present on the jobsite, provide Owner with employee's full name and date of birth, to allow the Owner to conduct a background check on the individual.

1.06 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner. Unloading will be permitted at loading docks as directed by Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

1.07 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations.

E. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Designed, manufactured, and tested in accordance with industry standards.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site and place in location directed by Owner's representative; obtain Owner's signature on receipt for delivery prior to final payment. Submit signed receipts with Closeout Submittals.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. Substitutions Prior To Bid Opening: Architect/Engineer will consider a written request for substitution provided that such request is received at least seven (7) days prior to the Bid opening date. Requests received after that time will not be considered.
   1. Only Substitution Requests from Bidders will be considered.
   2. If a request is approved, the Architect/Engineer will issue and appropriate addendum not less than three (3) days prior to the Bid opening date.

B. Substitutions After Notice of Award: Architect/Engineer will consider a request for substitution only from the Contractor and only under one or more of the following conditions:
   1. Substitution is required for compliance with final interpretation of code requirements or insurance regulations.
   2. Specified product is not available through no fault of the Contractor.
   3. Specified product is not compatible with other specified materials/equipment.
   4. Manufacturer will not certify or warranty specified product as required.

C. Document each request utilizing Substitution Request Form following this section with complete data substantiating compliance of proposed substitution with Contract Documents. Incomplete requests will not be considered. Submit a separate Substitution Request Form and accompanying documentation for each proposed substitution.

D. Provide the following minimum documentation with each Substitution Request Form:
   1. Product identification, manufacturer, product data including dimensions and weight, performance and installation instructions.
   2. Side-by-side itemized comparison of proposed substitution with specified product.
   3. Coordination information including other modifications required as a result of proposed substitution.
   4. Cost information including the effect of the proposed substitution on the Contract Sum.

E. Sign and date the Substitution Request Form.

F. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Agrees to reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction over the Project.

G. Architect/Engineer will notify submitter in writing of decision to accept or reject request.

H. Substitutions of products or product characteristics/components/options/accessories will not be considered when they are indicated or implied on Contractor's submittals, without separate written request, or when acceptance will require revision to the Contract Documents, whether rejection of said substitutions is expressly identified by Architect/Engineer on Contractor's submittals or not.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Do not store products directly on the ground.

I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

J. Prevent contact with material that may cause corrosion, discoloration, or staining.

K. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

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SUBSTITUTION REQUEST FORM

PROJECT: EXTERIOR DOOR RENOVATIONS DES PLAINES AND SKOKIE CAMPUSES

SPECIFIED ITEM: _____

_____	_____	_____	_____
Specification Section	Page	Paragraph	Description

The undersigned requests consideration of the following:

PROPOSED SUBSTITUTION: _____

_____

Attached data includes project description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments, are correct:

1. The proposed substitution does not affect dimensions shown on drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.

_____
Printed Name

_____
Signature Date

_____
Firm

_____
Telephone

_____
Email

Attachments (list):

For Use By The Architect/Engineer:

☐ Accepted ☐ Accepted As Noted

☐ Not Accepted ☐ Received Too Late

By: _____

Date: _____

Remarks:

Bloomington Office
2401 East Washington Street
Bloomington, Illinois 61704
309.430.6460

Aurora Office
41 W. Benton Street
Aurora, IL 60506
630.406.1213

SECTION 01 61 16
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for Indoor-Emissions-Restricted products.

B. Requirements for VOC-Content-Restricted products.

C. Requirement for installer certification that they did not use any non-compliant products.

1.02 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Submittal procedures.

1.03 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Other products when specifically stated in the specifications.

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Clay brick.
   3. Metals that are plated, anodized, or powder-coated.
   4. Glass.
   5. Ceramics.

1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2018).

C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.

D. GreenSeal GS-36 - Standard for Adhesives for Commercial Use; 2013.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. Sustainable Design Reporting: Submit evidence of compliance along with Accessory Material VOC Content Certification Form following this Section.

D. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
   1. Aerosol Adhesives: GreenSeal GS-36.
   2. Joint Sealants: SCAQMD 1168 Rule.
   3. Paints and Coatings: Each color; most stringent of the following:
      a. 40 CFR 59, Subpart D.
      b. SCAQMD 1113 Rule.
      c. CARB (SCM).

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 01 61 16.01
ACCESSORY MATERIAL VOC CONTENT CERTIFICATION FORM

1.01 PRODUCT CERTIFICATION

A. I certify that the installation work of my firm on this project:
   1. [HAS] [HAS NOT] required the use of any ADHESIVES.
   2. [HAS] [HAS NOT] required the use of any JOINT SEALANTS.
   3. [HAS] [HAS NOT] required the use of any PAINTS OR COATINGS.
   4. [HAS] [HAS NOT] required the use of any COMPOSITE WOOD or AGRIFIBER PRODUCTS.

B. Product data and MSDS sheets are attached.

2.01 CERTIFIED BY: (INSTALLER/MANUFACTURER/SUPPLIER FIRM)

A. Firm Name: _____

B. Print Name: _____

C. Signature: _____

D. Title: _____ (officer of company)

E. Date: _____

END OF SECTION

SECTION 01 70 00
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cutting and patching.

D. Cleaning and protection.

E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

F. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

A. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.

B. Section 01 50 00 - Temporary Facilities and Controls: Temporary exterior enclosures.

C. Section 01 77 00 - Closeout Procedures: Additional requirements for Project Closeout.

D. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 PROJECT CONDITIONS

A. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

B. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

C. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

D. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.05 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. Coordinate completion and clean-up of work of separate sections.

F. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.04 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect/Engineer before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on Drawings.
   2. Relocate items indicated on Drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.

C. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

D. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

E. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

F. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

G. Clean existing systems and equipment.

H. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

I. Do not begin new construction in alterations areas before demolition is complete.

J. Comply with all other applicable requirements of this section.

3.05 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.06 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.07 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.08 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
   1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean site; sweep paved areas, rake clean landscaped surfaces.

F. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.09 CLOSEOUT PROCEDURES

A. See Section 01 77 00 for additional requirements.

B. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect/Engineer.

C. Notify Architect/Engineer when work is considered ready for Architect/Engineer's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect/Engineer's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect/Engineer's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect/Engineer.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect/Engineer when work is considered finally complete and ready for Architect/Engineer's Substantial Completion final inspection.

H. Complete items of work determined by Architect/Engineer listed in executed Certificate of Substantial Completion.

3.10 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES:

A. Substantial Completion Procedures.

B. Final Completion Procedures.

1.02 RELATED REQUIREMENTS:

A. Section 01 10 00 - Summary.

B. Section 01 78 00 - Closeout Submittals.

1.03 SUBSTANTIAL COMPLETION PROCEDURES

A. Pre-Substantial Completion Conference:
   1. Schedule a Pre-substantial Completion Conference 15 days prior to the date of Substantial Completion. Prepare an agenda with copies for the participants and preside over the meeting.
   2. Attendance Required: Contractor, Architect/Engineer and Owner.
   3. Minimum Agenda:
      a. Schedule dates of Substantial Completion and Owner occupancy.
      b. Schedule dates for Initial Punch Lists of respective Subcontractors to be produced.
      c. Schedule date for written request for Substantial Completion.
      d. Schedule target date for completion of Initial Punch List items.
      e. Schedule delivery times for Owner-furnished items to be installed by Contractor, Owner's own forces or others under separate Contracts.
      f. Schedule dates for Demonstration and Training of equipment and systems specified.
      g. Schedule completion dates of testing and balancing reports for engineered Systems.
      h. Scheduling and Sequencing of Construction operations around areas partially occupied.
      i. Review job site security during transition of Owner occupancy.
      j. Schedule dates for final inspections from authorities having jurisdiction for Occupancy Permits.
      k. Review procedures for final cleaning.
      l. Review potential concerns regarding environmental conditions.
   4. Record minutes and distribute copies within three days after meeting to participants and those affected by decisions made.

B. Substantial Completion Procedures will be in accordance with the General Conditions of the Contract for Construction, Article 9.8 and include the following:
   1. When the Work or a portion of the Work is considered to be substantially complete, the Contractor inspects the project and prepares a comprehensive list of outstanding items to be completed or corrected, Initial Punch List.
   2. Contractor submits notice of Substantial Completion.
   3. Contractor completes items on the Initial Punch List.
   4. Architect/Engineer inspects the project to verify substantial completion and prepares a Final Punch List.

5. Architect/Engineer prepares Certificate of Substantial Completion, acceptance is required by Owner and Contractor.

1.04 FINAL COMPLETION PROCEDURES

A. Final Completion Procedures will be in accordance with the General Conditions of the Contract for Construction, Article 9.10, and include the following:
   1. When items on Initial and Final Punch Lists are complete, submit notice of final completion and final application for payment.
   2. Submit Final Closeout Submittals as specified in Section 01 78 00.
   3. Architect will inspect project and verifies the Work is acceptable and conforms with the Contract Documents.
   4. Architect will process final application for payment and closeout submittals.

1.05 CORRECTION PERIOD

A. Correction Period commences on the date of Substantial Completion and expires two years from that date.

B. Owner: document non-conforming or defective work over course of Correction Period. Notify Contractor in writing of nonconforming or defective work. Copy Architect/Engineer.
   1. Life safety issues requiring immediate corrective work: Contact Contractor for action.

C. Post Construction Walk Through:
   1. Time: eleven months after the date of Substantial Completion convene a meeting on site.
   2. Attendees: Architect/Engineer, Owner's Representative, End User and Maintenance Staff.
   3. Minimum Agenda:
      a. Review Owner's list of non-conforming or defective work.
      b. Conduct a walk through of the building and grounds
      c. Prepare a list of additional non-conforming or defective work items.
   4. Architect/Engineer:
      a. Prepare written report of findings within two weeks of meeting.
      b. Notify Contractor of impending corrective work requiring action.
      c. Monitor execution of corrective Work.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION - NOT USED.

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Warranties and bonds.

B. Project record documents.

C. Operation and maintenance data.

D. Format, arrangement and organization of Operation and Maintenance Manual electronic file.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.

D. Individual Product Sections: Specific requirements for operation and maintenance data.

E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Submit preliminary draft of proposed formats and outlines of contents of electronic Operation and Maintenance Manual, including warranties and bonds, record document Bookmarked Adobe PDF form before start of Work. Architect/Engineer will review draft and return with comments.

B. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

C. Project Record Documents: Submit documents to Architect/Engineer with claim for final Application for Payment.

D. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content as required prior to final submission.

E. Submit revised final Operation and Maintenance Manual, incorporating warranties and bonds, record documents and operation and maintenance data, in final form in Adobe PDF electronic file format on USB flash drive form within 10 days after final inspection.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

F. Include color, 300 dpi resolution scans of each in Operation and Maintenance Manual PDF file, Bookmarked and indexed separately in Table of Contents.

3.02 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

3.03 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.04 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
1. Product data, with catalog number, size, composition, and color and texture designations.
2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.05 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
1. Description of unit or system, and component parts.
2. Identify function, normal operating characteristics, and limiting conditions.
3. Include performance curves, with engineering data and tests.
4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Include manufacturer's printed operation and maintenance instructions.

H. Include sequence of operation by controls manufacturer.

I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

K. Additional Requirements: As specified in individual product specification sections.

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUAL

A. Assemble operation and maintenance data into a single electronic "manual" file in Adobe PDF file format for Owner's personnel use, with data arranged in the same sequence as, and bookmarked by, the specification sections.
   1. Media: USB flash drive of capacity sufficient to store entire PDF file, fragmented.
   2. Attach a tag or label flash drive with Project name, date, and the title "O&M Manual".

B. Organization and Arrangement of Contents: Arrange the contents of the "manual" file in using the following hierarchical system and create a corresponding hierarchy of Bookmarks in the file:
   1. Project Title Page.
   2. Project Directory.
   3. Table of Contents:
   4. Project Warranties.
      a. Division 01 - General
         1) General Contractor's Warranty.
         2) Record Drawings (marked-up version of A/E Drawings).
         3) Record Specifications (marked up version of A/E Specifications).
      b. Division 02
         1) [One Bookmark for each Specification section number and name where a warranty is required.]
         2) [Continue for each applicable Specification section.]
      c. [Continue for each applicable Division.]
   5. Record Documents.
      a. Record Drawings (marked-up version of A/E Drawings).
      b. Record Specifications (marked up version of A/E Specifications).
      c. [Continue for each Division.]
   6. Operation and Maintenance Data.
      a. Division 06
         1) [One Bookmark for each Specification section number and name where a O&M data is required.]

2) [Continue for each applicable Specification section.]

b. [Continue for each applicable Division.]

C. Where systems involve more than one Specification Section, provide separate Bookmark and content for each Specification Section.

D. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

E. Prepare data in the form of an instructional manual.

F. Cover Page: Populate the first page of the PDF file with: printed title "OPERATION AND MAINTENANCE MANUAL; identify title of Project; identify subject matter of contents.

G. Project Directory: Beginning on the second page of the PDF file; provide Title and address of Project; business names, addresses, and telephone numbers of Architect/Engineer, Consultants, Contractor, Subcontractors and Major Suppliers, with contact names of responsible individuals knowledgeable about the Project.

H. Table of Contents: List every item using the same identification as in the title of the Bookmark, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item

I. Bookmarks: Hierarchically under each Specification Section, further Bookmark each separate product and system; identify the contents in the title of the Bookmark; on the Bookmarked page provide a description of product and major component parts of equipment.

J. Content: Manufacturer's printed data, legibly scanned, in color where applicable, at 300 dpi (minimum) resolution.

K. Drawings: Legibly scanned, in color where applicable, at 300 dpi (minimum) resolution; PDF file page size to match native sheet size of original drawing.

3.07 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include color, 300 dpi resolution scans of each in Operation and Maintenance Manual PDF file, Bookmarked and indexed separately in Table of Contents.

END OF SECTION

SECTION 01 79 00
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems where indicated in specific specification sections.

B. Training of Owner personnel in operation and maintenance is required for:
   1. Software-operated systems.
   2. Door hardware key management system.
   3. Door access control system.
   4. Other items specified in individual product Sections.

1.02 RELATED REQUIREMENTS

A. Section 01 78 00 - Closeout Submittals: Operation and maintenance manuals.

B. Other Specification Sections: Additional requirements for demonstration and training.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Training Plan: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to Owner's Representative Agency for transmittal to Owner.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
   1. Identification of each training session, date, time, and duration.

2. Sign-in sheet showing names and job titles of attendees.
3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

E. Video Recordings: Submit digital video recording of each demonstration and training session for Owner's subsequent use.
1. Format: DVD Disc.
2. Label each disc and container with session identification and date.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.

B. Demonstration may be combined with Owner personnel training if applicable.

C. Operating Equipment and Systems: Demonstrate normal operation and troubleshooting, and database maintenance procedures.
1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. Owner will provide training area and seating at no cost to Contractor.

C. Provide training in minimum two hour segments.

D. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

E. Product- and System-Specific Training:
1. Review the applicable O&M manuals.
2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
3. Review instructions for normal operation and database maintenance.
4. Provide hands-on training on all operational procedures.
5. Discuss common troubleshooting problems and solutions.

6. Discuss any peculiarities of system installation or operation.
7. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
8. Review recommended tools and spare parts inventory suggestions of manufacturers.
9. Review spare parts suppliers and sources and procurement procedures for components and software updates.

F. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 07 84 00
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

C. Smoke-stopping of all penetrations of and joints in horizontal and vertical assemblies designed to resist the passage of smoke and hot gasses, whether indicated on drawings or not, and other openings indicated.

1.02 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2022.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2023a.

C. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015, with Editorial Revision (2021).

D. ITS (DIR) - Directory of Listed Products; Current Edition.

E. FM 4991 - Approval Standard of Firestop Contractors; 2013.

F. FM (AG) - FM Approval Guide; Current Edition.

G. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

H. UL 1479 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.

I. UL (DIR) - Online Certifications Directory; Current Edition.

J. UL (FRD) - Fire Resistance Directory; Current Edition.

1.03 DEFINITIONS

A. Assembly: Particular arrangement of materials specific to given type of construction described or detailed in referenced documents.

B. Barriers: Time rated fire walls, smoke barrier walls, time rated ceiling/floor assemblies and structural floors.

C. Firestopping: Methods and materials applied as a system around penetrations and in unprotected openings to limit spread of heat, fire gasses and smoke.

D. Penetration: Opening or foreign material passing through or into barrier or structural floor such that full thickness of rated materials is not obtained.

E. Joint: Interruption to a fire-rated assembly occurring at interface between 1) adjacent sections of wall, 2) intersecting walls, 3) top of wall and ceiling, structural floor or roof deck, 4) wall and edge of structural floor, 5) adjacent sections of structural floor.

F. System: Specific products and applications, classified and numbered by Underwriters Laboratories, Inc. to close specific barrier penetrations and joints.

G. Sleeve: Metal fabrication or pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.

1.04 SYSTEM DESCRIPTION

A. Design Requirements:
   1. Fire-rated construction: Maintain barrier and structural floor fire resistance ratings including resistance to cold smoke at all penetrations, connections with other surfaces or types of construction, at separations required to permit building movement and sound or vibration absorption, and at other construction gaps.
   2. Smoke barrier construction: Maintain barrier and structural floor resistance to cold smoke at all penetrations, connections with other surfaces and types of construction and at all separations required to permit building movement and sound or vibration absorption, and at other construction gaps.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
   1. Provide manufacturer's qualified engineering judgements for non-standard applications.

C. Product Data: Provide data on product characteristics, performance ratings, and limitations.

D. Sustainable Design Submittal: Submit VOC content documentation for non-performed materials.

E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's qualification statement.

H. Installer's qualification statement.

1.06 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
   2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
   3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:

1. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
2. Verification of minimum three years documented experience installing work of this type.
3. Verification of at least five satisfactorily completed projects of comparable size and type.
4. Licensed by local authorities having jurisdiction (AHJ).

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver products in original, unopened packaging with legible manufacturer's identification.

B. Coordinate delivery with scheduled installation date to minimize storage time at site.

C. Store materials in a clean, dry, ventilated location. Protect materials from freezing if required by manufacturer.

1.08 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Firestopping Manufacturers:
1. 3M Fire Protection Products: www.3m.com/firestop.
2. A/D Fire Protection Systems Inc: www.adfire.com.
3. Hilti, Inc: www.us.hilti.com.
4. RectorSeal, a CSW Industrials Company: www.rectorseal.com/firestop-solutions.
5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.

C. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.

D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
2. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

B. Acceptable Manufacturers: As listed in UL (FRD) for specific UL Design Number.

C. Fill, Void or Cavity Materials: Conform to UL (FRD) - XHHW.

D. Firestop Devices: Conform to UL (FRD) - XHJI.

E. Forming Materials: Conform to UL (FRD) - XHKU.

F. Mechanical Joint Assemblies: Conform to UL (FRD) - XHLP.

G. Packing Material: As required by specific UL Design Number for joint system or through-penetration firestop system.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.
   1. Verify barrier joints and penetrations are properly sized and in suitable condition for application of materials.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

A. Install materials in manner described in UL (FRD) or fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authorities having jurisdiction.

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

B. Patch or replace firestopping damaged by work of other sections.

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015 (Reapproved 2022).

B. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants; 2018 (Reapproved 2022).

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2023.

E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.

G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.

H. SWRI (VAL) - SWR Institute Validated Products Directory; Current Edition.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Backing material recommended by sealant manufacturer.
   4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   5. Substrates the product should not be used on.
   6. Substrates for which use of primer is required.
   7. Substrates for which laboratory adhesion and/or compatibility testing is required.
   8. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
   9. Sample product warranty.

10. Certification by manufacturer indicating that product complies with specification requirements.
11. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.

C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

E. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect/Engineer and submit at least two physical samples for verification of color of each required sealant.

F. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

G. Installer's qualification statement.

H. Executed warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least five years of documented experience.

C. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
1. Adhesion Testing: In accordance with ASTM C794.
2. Compatibility Testing: In accordance with ASTM C1087.
3. Allow sufficient time for testing to avoid delaying the work.
4. Deliver sufficient samples to manufacturer for testing.
5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

1.06 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Nonsag Sealants:
1. Dow Corning Corporation: www.dowcorning.com/construction.

2. Hilti, Inc: www.us.hilti.com.
3. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us.
4. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
5. Pecora Corporation: www.pecora.com.
6. Sika Corporation: www.usa-sika.com.
7. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
8. W.R. Meadows, Inc: www.wrmeadows.com.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints:
      a. Seal open joints except open joints indicated on drawings as not sealed.
   2. Interior Joints:
      a. Seal open joints except specific open joints indicated on drawings as not sealed.
   3. Do Not Seal:
      a. Intentional weep holes in masonry.
      b. Weep holes in curtain wall, storefront and window systems.
      c. Joints indicated to be covered with expansion joint cover assemblies.
      d. Joints where sealant is specified to be furnished and installed by manufacturer of product to be sealed.
      e. Joints where sealant installation is specified in other sections.
      f. Joints between suspended ceilings and walls.

B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products with acceptable levels of volatile organic compound (VOC) content; see Section 01 61 16.

2.04 NONSAG JOINT SEALANTS

A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
   1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
   2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
   3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
   4. Color: To be selected by Architect/Engineer from manufacturer's standard range.
   5. Cure Type: Single-component, neutral moisture curing.
   6. Products:
      a. Dow Chemical Company; DOWSIL 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html.
      b. Sika Corporation; Sikasil WS-290: www.usa-sika.com.
      c. Sika Corporation; Sikasil 728NS: www.usa-sika.com.
      d. Tremco Commercial Sealants & Waterproofing; Spectrem 1: www.tremcosealants.com.
      e. Tremco Commercial Sealants & Waterproofing; Tremsil 200: www.tremcosealants.com.

f. Substitutions: See Section 01 60 00 - Product Requirements.

B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
   1. Hardness Range: 35 to 45, Shore A, when tested in accordance with ASTM C661.
   2. Products:
      a. Sika Corporation; Sikaflex-15 LM: www.usa-sika.com.
      b. Sika Corporation; Sikaflex-2c NS: www.usa-sika.com.
      c. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

2.05 ACCESSORIES

A. Sealant Backing Rod, Closed-Cell Type:
   1. Cylindrical flexible sealant backings complying with ASTM C1330 Type C.
   2. Size: 25 to 50 percent larger in diameter than joint width.

B. Sealant Backing Rod, Bi-Cellular Type:
   1. Cylindrical flexible sealant backings complying with ASTM C1330 Type B.
   2. Size: 25 to 50 percent larger in diameter than joint width.

C. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

D. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

E. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.

F. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in an inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.

D. Install bond breaker backing tape where backer rod cannot be used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.04 POST-OCCUPANCY

A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width, i.e., at low temperature in thermal cycle. Report failures immediately and repair them.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

B. Fire-rated hollow metal doors and frames.

C. Thermally insulated hollow metal doors with frames.

1.02 RELATED REQUIREMENTS

A. Section 08 71 00 - Door Hardware.

B. Section 09 90 00 - Painting and Coating: Field painting.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.

C. ANSI/SDI A250.6 - Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames; 2020.

D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.

E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.

F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.

G. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.

H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.

I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.

J. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.

K. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.

M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.

N. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.

O. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.

P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.

Q. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; 2022.

R. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

S. UL (DIR) - Online Certifications Directory; Current Edition.

T. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

D. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Doors and Frames:
   1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com.
   2. Curries, an Assa Abloy Group company: www.assaabloydss.com.
   3. Republic Doors, an Allegion brand: www.republicdoor.com.
   4. Steelcraft, an Allegion brand: www.allegion.com.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:

1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Door Edge Profile: Manufacturers standard for application indicated.
4. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
5. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
6. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
    a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

A. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    a. Level 3 - Extra Heavy-duty.
    b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
    c. Model 2 - Seamless.
    d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
2. Door Core Material: Polyurethane, 1.8 lbs/cu ft minimum density.
    a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
3. Door Thermal Resistance: U-factor of 0.37, maximum.
4. Door Thickness: 1-3/4 inches, nominal.
5. Top and Bottom Closures: Flush with top/bottom of faces and edges.
6. Door Face Sheets: Flush.
7. Weatherstripping: Refer to Section 08 71 00.
8. Door Finish: Factory primed and field finished.

B. Interior Doors, Non-Fire-Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    a. Level 3 - Extra Heavy-duty.
    b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.

c. Model 1 - Full Flush; Seamless for corrosive locations.
d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M for corrosive locations.

2. Door Thickness: 1-3/4 inches, nominal.
3. Door Face Sheets: Flush.
4. Door Finish: Factory primed and field finished.

C. Fire-Rated Doors:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
a. Level 3 - Extra Heavy-duty.
b. Physical Performance Level A, 1,000,000 cycles; in accordance with ANSI/SDI A250.4.
c. Model 1 - Full Flush; Seamless for exterior locations.
d. Door Face Metal Thickness: 16 gauge, 0.053 inch, minimum.
e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M for exterior or corrosive locations.

2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
3. Temperature-Rise Rating (TRR) Across Door Thickness for Stairway Doors: Not more than 450 degrees F above ambient after 30 minutes of fire test exposure.
4. Provide units listed and labeled by UL (DIR).
a. Attach fire rating label to each fire rated unit.

5. Door Core Material: Manufacturers standard core material/construction in compliance with requirements.
6. Door Thickness: 1-3/4 inches, nominal.
7. Door Face Sheets: Flush.
8. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Exterior Door Frames: Full profile/continuously welded type.
1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A60/ZF180 coating.
2. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.
3. Frame Finish: Factory primed and field finished.
4. Weatherstripping: Separate, see Section 08 71 00.

C. Interior Door Frames, Non-Fire Rated: Face welded type; non-welded joints filled for seamless appearance.
1. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
2. Frame Finish: Factory primed and field finished.

D. Door Frames, Fire-Rated: Face welded type; non-welded joints filled for seamless appearance.
1. Fire Rating: Same as door, labeled.
2. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
3. Frame Finish: Factory primed and field finished.

E. Mullions for Pairs of Doors: Fixed, except where removable is indicated, with profile similar to jambs.

F. Frames Wider than 48 inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
   1. Fire-Rated Frames: Comply with fire rating requirements indicated.

2.06 ACCESSORIES

A. Astragals and Edges for Double Doors: Pairs of door astragals, and door edge sealing and protection devices.
   1. UL listed products in compliance with requirements of authorities having jurisdiction.
   2. Provide integral astragal to cover or fill space for full door height between pair of doors, with necessary cutouts for door hardware.
   3. Material: Steel.

B. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

C. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Install door hardware as specified in Section 08 71 00.
   1. Comply with recommended practice for hardware placement of doors and frames in accordance with ANSI/SDI A250.6 or NAAMM HMMA 861.

E. Coordinate installation of electrical connections to electrical hardware items.

F. Touch up damaged factory finishes.

3.03 TOLERANCES

A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.

B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the Drawings.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for aluminum and hollow metal doors.

B. Thresholds.

C. Weatherstripping and gasketing.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames.

B. Section 26 05 83 - Wiring Connections: Power supply to electric hardware devices.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. BHMA (CPD) - Certified Products Directory; Current Edition.

C. BHMA A156.1 - Standard for Butts and Hinges; 2021.

D. BHMA A156.2 - Bored and Preassembled Locks and Latches; 2022.

E. BHMA A156.3 - Exit Devices; 2020.

F. BHMA A156.4 - Door Closers and Pivots; 2024.

G. BHMA A156.5 - Cylinders and Input Devices for Locks; 2020.

H. BHMA A156.6 - Standard for Architectural Door Trim; 2021.

I. BHMA A156.7 - Template Hinge Dimensions; 2022.

J. BHMA A156.13 - Mortise Locks & Latches Series 1000; 2022.

K. BHMA A156.18 - Standard for Materials and Finishes; 2020.

L. BHMA A156.21 - Thresholds; 2019.

M. BHMA A156.22 - Standard for Gasketing; 2021.

N. BHMA A156.28 - Standard for Recommended Practices for Mechanical Keying Systems; 2023.

O. BHMA A156.29 - American National Standard for Exit Locks, Exit Alarms, Alarms for Exit Devices; 2017.

P. BHMA A156.30 - High Security Cylinders; 2020.

Q. BHMA A156.31 - Electric Strikes and Frame Mounted Actuators; 2024.

R. DHI (H&S) - Sequence and Format for the Hardware Schedule; 2019.

S. DHI (KSN) - Keying Systems and Nomenclature; 2019.

T. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.

U. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.

V. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

W. UL (DIR) - Online Certifications Directory; Current Edition.

X. UL 437 - Standard for Key Locks; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

C. Preinstallation Meeting: Convene a preinstallation meeting one week prior to commencing work of this section; attendance is required by affected installers and the following:
   1. Architect/Engineer.
   2. Installer's Architectural Hardware Consultant (AHC).
   3. Hardware Installer.
   4. Owner's Security Consultant.

D. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
   2. Comply with DHI (H&S) using door numbers and hardware set numbers as indicated in construction documents.
   3. List groups and suffixes in proper sequence.
   4. Provide complete description for each door listed.
   5. Provide manufacturer name, product names, and catalog numbers; include functions, types, styles, sizes and finishes of each item.
   6. Include account of abbreviations and symbols used in schedule.

D. Installer's qualification statement.

E. Supplier's qualification statement.

F. Maintenance Materials and Tools: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Lock Cylinders: One for each master keyed group.
3. Tools: One set of each special wrench or tool applicable for each different or special hardware component, whether supplied by hardware component manufacturer or not.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years of experience.

B. Installer Qualifications: Company specializing in performing work of the type specified for commercial door hardware with at least five years of documented experience.

C. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.08 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.
   2. Accessibility: ADA Standards and ICC A117.1.
   3. Applicable provisions of NFPA 101.
   4. Listed and certified compliant with specified standards by BHMA (CPD).

D. Fasteners:
   1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
      a. Aluminum fasteners are not permitted.
      b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
   2. Fire-Rated Applications: Comply with NFPA 80.
      a. Provide wood or machine screws for hinges mortised to doors or frames, strike plates to frames, and closers to doors and frames.
      b. Provide steel through bolts for attachment of surface mounted closers, hinges, or exit devices to door panels unless proper door blocking is provided.

2.02 HINGES

A. Hinges: Comply with BHMA A156.1, Grade 1 for heavy weight hinges, Grade 2 for standard weight hinges.
   1. Provide hinges on every side-swinging door.

B. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
   1. Manufacturers:
      a. Hager Companies: www.hagerco.com.
      b. Ives, an Allegion brand: www.allegion.com/us.
      c. McKinney; an Assa Abloy Group company: www.assaabloydss.com.
      d. Stanley, dormakaba Group: www.stanleyhardwarefordoors.com.
      e. Substitutions: Not permitted.
   2. Imported or so-called "economical" or "contractor grade" hinges are not acceptable.
   3. Size: Sufficient to clear trim and allow doors, otherwise free of obstruction, to open 180 degrees.
      a. Door Leaves Up To 36 inches Wide and 1¾ inches Thick: 4½ x 4 ½ inch.
      b. Door Leaves over 36 inches Wide And/Or Over 1¾ inches Thick: 5 x 5 inches.
   4. Material:
      a. Interior Door Leafs Up To 36 Inches Wide: Wrought or stainless steel, standard weight (0.134 inch).
      b. Vestibule Doors, Exterior Doors, and Door Leafs Over 36 Inches Wide: Solid bronze or stainless steel, heavy weight (0.180 or 0.190 inch).
   5. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
   6. Provide ball-bearing hinges at each door with closer.
   7. Provide non-removable pins on exterior outswinging doors.
   8. Provide non-removable pins on interior outswinging doors at locations as indicated.
   9. Provide power transfer hinges where electrified hardware is mounted in door leaf. Provide four- or eight-wire type as appropriate for complete installation of:
      a. Concealed door monitoring contacts and other security access components.
      b. Power transfer to/from other scheduled door hardware.
   10. Provide following quantity of butt hinges for each door:
      a. Doors From 60 inches High up to 90 inches High: Three hinges.
      b. Doors 90 inches High up to 120 inches High: Four hinges.

2.03 EXIT DEVICES

A. Manufacturer:
   1. Von Duprin, an Allegion brand; 99 Series (33A Series for less than wide stile door applications): www.allegion.com/us.
   2. Substitutions: Not permitted.

B. Single Source Responsibility: Provide exit devices and trim, including electrified items, of one manufacturer as listed above for continuity of design and consideration of warranty and Owner's maintenance program.

C. Exit Devices: Comply with BHMA A156.3, Grade 1 requirements; comply with performance requirements of NFPA 80 and NFPA 101.
   1. Lever design to match lockset trim.

2. Omit dogging function on exterior doors scheduled to have electric strikes.
3. Provide exit devices properly sized for door width and height.
4. Provide strike as recommended by manufacturer for application indicated.
5. Fire-Rated Doors: Provide UL (DIR) listed devices labeled “Fire Exit Hardware”. Provide proper quantity and type of fasteners to install devices as tested and listed by UL and required by the manufacturer. Consult manufacturer’s catalog and template book for specific requirements.
6. Non-Rated Doors: Provide UL listed devices labeled “Panic Hardware” based on testing according to UL 305. Provide proper fasteners as required by manufacturer, including sex nuts and bolts for hollow metal doors not prepared for machine screws and for particle board core wood doors.
7. For electrical options, provide quick connect plug-in pre-wired connectors.

2.04 EXIT ALARMS

A. Manufacturer:
   1. Alarm Lock, a subsidiary of NAPCO Security Technologies, Inc; PG21 Series: www.alarmlock.com.
   2. Substitutions: Not permitted.

B. Exit Alarms: Comply with BHMA A156.29.
   1. Stand alone type.
   2. Power: Battery-powered.
   3. Standard Features: Field-selectable arming modes
   4. Arming and Disarming: By inside control key, allowing authorized entry or exit by means of an on-and-off key switch.
      a. Key Cylinder and Keys: See Door Hardware Schedule.
   5. Alarm: Manufacturer's standard piezo horn.
      a. Loudness Rating: 110 dB at 10 feet, minimum.
      b. Adjustable Allowable Bypass Time: Manufacturer's standard.
         1) Functionality: Factory-set and field-adjustable.
         2) Time Limit Settings: 15 seconds, 1 minute 15 seconds, 3 minutes 15 seconds.
      c. Low battery alert.
   6. Housing: Manufacturer's standard.
   7. Cover Plate Color: Metallic silver.
   8. Mounting: As indicated on drawings.
   9. Accessories: Provide items in locations and quantities indicated.
      a. Warning Sign: Include with alarm.

2.05 ELECTRIC STRIKES

A. Manufacturers:
   1. HES; an Assa Abloy Group company; 9600 Series rim strikes for doors with exit devices; 1006 Series for doors with mortise locksets : www.assaabloydss.com.
   2. Substitutions: Not permitted.

B. Electric Strikes: Comply with BHMA A156.31, Grade 1.
   1. Provide UL (DIR) listed burglary-resistant electric strike; style to suit locks.

2. Provide non-handed field-selectable 12 / 24 VDC electric strike suitable for door frame material and scheduled lock configuration.
3. Provide transformer and rectifier as necessary for complete installation.
4. Connect electric strikes into fire alarm where non-rated doors are scheduled to release with fire or sprinkler alarm condition.

2.06 LOCK CYLINDERS AND KEYING

A. Manufacturer:
   1. Sargent; an Assa Abloy Group company: www.assaabloydss.com.
   2. Substitutions: Not permitted.

B. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
   1. Provide standard small format interchangeable core (SFIC) type mechanical cylinders, Grade 1, with six-pin core in compliance with BHMA A156.5 for interior doors and dogging cylinders on exit devices.
      a. Product: Sargent Conventional.
   2. Provide high security type mechanical removable core mortise cylinders and removable core rim cylinders, Grade 1, with twelve-pin core in compliance with BHMA A156.30 or UL 437 for exterior doors.
      a. Products:
         1) Sargent Keso F1-164 Series removable core rim cylinders.
         2) Sargent Keso F1-170 Series removable core mortise cylinders.
   3. Provide cams and/or tailpieces as required for locking devices.

2.07 CYLINDRICAL LOCKS

A. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch diameter.
   2. Latchbolt Throw: 1/2 inch, minimum.
   3. Backset: 2-3/4 inch unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.
   5. Provide locksets that require no more than one operation to simultaneously unlock and unlatch doors in the direction of egress.

2.08 MORTISE LOCKS

A. Manufacturer:
   1. Sargent; an Assa Abloy Group company; 8200 Series: www.assaabloydss.com.
   2. Substitutions: Not permitted.

B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.
   1. Latchbolt Throw: 3/4 inch, minimum.
   2. Deadbolt Throw: 1 inch, minimum.
   3. Backset: 2-3/4 inch unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

5. Provide a lock for each door, unless otherwise indicated that lock is not required.
6. Provide locksets that require no more than one operation to simultaneously unlock and unlatch doors in the direction of egress.
7. Trim: Provide lever handle or pull trim on outside of each lock, unless otherwise indicated.
   a. Manufacturer's "L" style lever and "LN" style rose.

2.09 DOOR PULLS AND PUSH PLATES

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com.
   2. Hager Companies: www.hagerco.com.
   3. Hiawatha, Inc, division of Activar Construction Products Group, Inc: www.activarcpg.com/hiawatha.
   4. Trimco: www.trimcohardware.com.
   5. Substitutions: See Section 01 60 00 - Product Requirements.

B. Door Pulls and Push Plates: Comply with BHMA A156.6.
   1. Pull Type: Offset, unless otherwise indicated.
   2. Push Plate Type: Flat, with square corners, unless otherwise indicated.
      a. Edges: Beveled, unless otherwise indicated.
   3. Material: Stainless steel, unless otherwise indicated.
   4. Size: 1" diameter; 10" CTC.

2.10 CLOSERS

A. Manufacturer; Surface Mounted:
   1. Norton; an Assa Abloy Group company; 8000 Series: www.assaabloydss.com.
   2. Substitutions: Not permitted.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer on each exterior door.
   3. Where an overlapping astragal is included on pairs of swinging doors, provide coordinator to ensure door leaves close in proper order.
   4. At outswinging exterior doors, mount closer on interior side of door.

2.11 PROTECTION PLATES

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company: www.assaabloydss.com.
   2. Hager Companies: www.hagerco.com.
   3. Hiawatha, Inc, an Activar Construction Products Group company: www.activarcpg.com/hiawatha.
   4. Ives, an Allegion brand: www.allegion.com/us.
   5. Trimco: www.trimcohardware.com.
   6. Substitutions: Not permitted.

B. Protection Plates: Comply with BHMA A156.6.

C. Metal Properties: Stainless steel material.

1. Metal, Standard Duty: Thickness 0.050 inch, minimum.

D. Edges: Beveled, on four sides unless otherwise indicated.

E. Fasteners: Countersunk screw fasteners.

F. Kick Plates: Provide along bottom edge of push side of every door with closer, except aluminum storefront and glass entry doors, unless otherwise indicated.
   1. Size: 8 inch high by 2 inch less door width (LDW) on push side of door.

2.12 THRESHOLDS

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com.
   2. Hager Companies: www.hagerco.com.
   3. National Guard Products, Inc: www.ngpinc.com.
   4. Reese Enterprises, Inc: www.reeseusa.com/#sle.
   5. Zero International, Inc: www.zerointernational.com.
   6. Substitutions: Not permitted.

B. Thresholds: Comply with BHMA A156.21.
   1. Provide threshold at each exterior door, unless otherwise indicated.
   2. Type: Saddle.
   3. Material: Aluminum.
   4. Threshold Surface: Fluted horizontal grooves across full width.
   5. Widths: As required to completely conceal surfaces left exposed by removal of existing thresholds.
   6. Field cut threshold to profile of frame and width of door sill for tight fit.
   7. Provide non-corroding fasteners at exterior locations.

2.13 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company: www.assaabloydss.com.
   2. Hager Companies: www.hagerco.com.
   3. National Guard Products, Inc: www.ngpinc.com.
   4. Reese Enterprises, Inc: www.reeseusa.com.
   5. Zero International, Inc: www.zerointernational.com.
   6. Substitutions: Not permitted.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Adjustable.
   2. Door Sweep Type: Encased in retainer.
   3. Material: Aluminum, with neoprene or silicone weatherstripping.
   4. Provide weatherstripping on each exterior door at head, jambs, and meeting stiles of door pairs, unless otherwise indicated.
   5. Provide door bottom sweep on each exterior door, unless otherwise indicated.

2.14 KEY CONTROL SYSTEMS

A. Manufacturers:

1. Sargent; an Assa Abloy Group company: www.assaabloydss.com.
2. Substitutions: Not permitted.

B. Key Control Systems: Comply with guidelines of BHMA A156.28.
   1. Provide keying information in compliance with DHI (KSN) standards.
   2. Keying: Great grand master keyed.
   3. Include construction keying and control keying with removable core cylinders.
   4. Supply keys in following quantities:
      a. 3 each Great Grand Master keys.
      b. 6 each Construction Master keys.
      c. 15 each Construction keys.
      d. 2 each Construction Control keys.
      e. 2 each Control keys if new system.
      f. 2 each Extra Cylinder cores.
      g. 2 each Change keys for each keyed core.
   5. Key Management Software:
      a. Microsoft SQL Server-based database software capable of storing an unlimited number of records and with the following characteristics/capabilities:
         1) Open licensing; 5 maximum concurrent users.
         2) Capable of storing information about all door hardware installed on each opening.
         3) Key management features:
            a) Authorized holders with schedules for key rings.
            b) Management of deposits, refunds and fees.
            c) Handling of key requests.
            d) Management of work orders and purchase orders.
         4) Web interface.
         5) Compatibility with RFID & bar code technologies.
         6) Import templates for bulk import of existing catalogued data.
         7) Graphic, interactive floor plans for viewing and querying of door locations.
         8) Advanced features for locksmiths.
         9) Turnkey implementation service.
      b. Product: SimpleK; Enterprise Edition: www.simplek.com.
   6. Key Management Tags: For each keyed lock on project, provide one set of consecutively numbered duplicate key tags with hanging hole and snap catch.
   7. Security Key Tags: For each keyed lock on project, provide one set of matching key tags for permanent attachment to one key of each set.
   8. Provide key collection envelopes, receipt cards, and index cards in quantity suitable to manage number of keys.
   9. Deliver keys with identifying tags to Owner by security shipment direct from hardware supplier.
   10. Permanent Keys and Cores: Stamped with applicable key marking for identification. Do not include actual key cuts within visual key control marks or codes. Stamp permanent keys "Do Not Duplicate."
   11. Owner or Owner's agent install permanent cores and return construction cores to hardware supplier. Construction cores and keys to remain property of hardware supplier.

2.15 POWER SUPPLIES

A. Power Supplies: Hard wired, with multiple zones providing eight (8) breakers for each output panel with individual control switches and LED's; UL (DIR) Class 2 listed.
   1. Power: 12 VAC, 20 Amp; with 120 VAC power supply.
   2. Operating Temperature: 32 to 110 degrees F.
   3. Provide with emergency release terminals that release devices upon activation of fire alarm system.

2.16 FINISHES

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
   1. Finish: 625; bright chromium plated over nickel, with brass or bronze base material (former US equivalent US26); BHMA A156.18.
   2. Exceptions:
      a. Where base material metal is specified to be different, provide finish that is an equivalent appearance in accordance with BHMA A156.18.
      b. Hinges for Fire-Rated Doors: Steel base material with painted finish, in compliance with NFPA 80.
      c. Door Closer Covers and Arms: Color as selected by Architect/Engineer from manufacturer's standard colors unless otherwise indicated.
      d. Aluminum Surface Trim and Gasket Housings: Anodized to match door panel finish, not other hardware, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

B. Verify that electric power is available to power operated devices and of correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Install hardware on fire-rated doors and frames in accordance with applicable codes and NFPA 80.

C. Use templates provided by hardware item manufacturer.

D. Do not install surface mounted items until application of finishes to substrate are fully completed.

E. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
   1. For Steel Doors and Frames: See Section 08 11 13.
   2. Mounting heights in compliance with ADA Standards:
      a. Locksets: 40-5/16 inch.
      b. Pulls: 42 inch.
      c. Exit Devices: 40-5/16 inch.

F. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

G. Install key management software on Owner's server (with Owner's IT oversight).
   1. Import Owner's existing keying information from existing Key Wizard software or exported CSV or XLS file. Verify information has imported correctly and is ready for use within the software.

3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing under provisions of Section 01 40 00 - Quality Requirements.

B. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.04 ADJUSTING

A. Adjust work under provisions of Section 01 70 00 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.05 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

C. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 01 70 00 - Execution and Closeout Requirements.

B. Do not permit adjacent work to damage hardware or finish.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing compounds.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

F. ASTM C1036 - Standard Specification for Flat Glass; 2021.

G. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.

H. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).

I. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.

J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2016.

K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.

L. GANA (SM) - GANA Sealant Manual; 2008.

M. NFRC 100 - Procedure for Determining Fenestration Product U-factors; 2023.

N. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence; 2023.

O. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

D. Samples: Submit two samples 12 by 12 inch in size of insulating glass units.

E. Certificate: Certify that products of this section meet or exceed specified requirements.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with GANA (GM) and GANA (SM) for glazing installation methods.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum fifteen years of documented experience.

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years documented experience.
   1. Provide company, field supervisors, and installers that hold active ANSI accredited certifications in appropriate categories for work specified.

1.07 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 40 degrees F.

B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.08 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Design Pressure: Calculated in accordance with ASCE 7.
   2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.

3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
4. Glass thicknesses listed are minimum.

B. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
a. Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
b. Complies with ANSI Z97.1 - Class A and 16 CFR 1201 - Category II criteria.

2.03 INSULATING GLASS UNITS

A. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

B. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Metal-Edge Spacers: Aluminum, bent and soldered corners.
4. Spacer Color: Aluminum.
5. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
6. Color: Black.
7. Purge interpane space with dry air, hermetically sealed.

C. Type SG1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with argon.
3. Outboard Lite: fully tempered safety glass, 1/4 inch thick, minimum.
a. Tint: Match existing.
b. Coating: Low-E (passive type), on #2 surface.
4. Metal edge spacer.

5. Inboard Lite: Fully tempered safety glass, 1/4 inch thick, minimum.
   a. Tint: Clear.
6. Total Thickness: 1 inch.
7. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.24, maximum.
8. Solar Heat Gain Coefficient (SHGC): 0.38, maximum.

2.04 GLAZING COMPOUNDS

A. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

2.05 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

A. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.02 INSTALLATION - WET/DRY GLAZING METHOD (PREFORMED TAPE AND SEALANT)

A. Application - Exterior Glazed: Set glazing infills from the exterior of the building.

B. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with butyl sealant.

C. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.

D. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

E. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.

F. Install removable stops, with spacer strips inserted between glazing and applied stops 1/4 inch below sight lines.
   1. Place glazing tape on glazing pane of unit with tape flush with sight line.

G. Fill gap between glazing and stop with silicone type sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.

H. Apply cap bead of silicone type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.03 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.04 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 09 90 00
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Interior painting and coating systems.

C. Exterior painting and coating systems.

D. Scope:
   1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
      a. Exterior:
         1) Metal: Steel doors and frames.
      b. Interior:
         1) Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
         2) Drywall: Walls, ceilings, gypsum board, and similar items.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.

C. SCAQMD 1113 - Architectural Coatings; 1977, with Amendment (2016).

D. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

E. SSPC-SP 6/NACE No.3 - Commercial Blast Cleaning; 2006.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Clean-up information.

C. Samples: Submit four paper draw down samples, 8-1/2 by 11 inches in size, illustrating selected colors for each finishing product specified.

D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

E. Maintenance Data: Submit coating maintenance manual including finish schedule showing where each product/color/finish was used, product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.

C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

D. Handling: Maintain a clean, dry storage area to prevent contamination or damage to materials.

1.06 FIELD CONDITIONS

A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.

B. Follow manufacturer's recommended procedures for producing the best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company (The) products indicated; www.sherwin-williams.com.

B. Comparable Products: Products of approved manufacturers will be considered in accordance with 01 60 00 - Product Requirements, and the following:
   1. Products that meet or exceed performance and physical characteristics of basis of design products.

2.02 PAINTINGS AND COATINGS

A. General:
   1. Provide factory-mixed coatings unless otherwise indicated.
   2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:

a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
b. SCAQMD 1113 Rule.
c. CARB (SCM).
d. Architectural coatings VOC limits of State in which the project is located.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site, or other method acceptable to authorities having jurisdiction.

C. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

2.03 PAINT SYSTEMS - EXTERIOR

A. Metal (Type PT1): Steel doors and frames.
1. Alkyd Systems, Water Based:
a. Semi-Gloss Finish:
1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: www.sherwin-williams.com.
a) 5 mils wet, 2 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Water Based Alkyd Urethane Enamel Semi-Gloss, B53-1150 Series: www.sherwin-williams.com.
a) 4 to 5 mils wet, 1.4 to 1.7 mils dry per coat.

2.04 PAINT SYSTEMS - INTERIOR

A. Masonry CMU (Type PT2):
1. Latex Systems:
a. Semi-Gloss Finish High Performance (HP):
1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: www.sherwin-williams.com.
a) 75 to 125 sq ft/gal.
2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 HP Zero VOC Latex Semi-Gloss, B31-1950 Series: www.sherwin-williams.com/#sle.
a) 4 mils wet, 1.6 mils dry per coat.

B. Drywall (Type PT3): Walls, ceilings, gypsum board, and similar items.
1. Latex Systems:
a. Eg-Shel Finish High Performance (HP):
1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: www.sherwin-williams.com.
a) 4 mils wet, 1.5 mils dry per coat.
2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 HP Zero VOC Eg-Shel, B20-1950 Series: www.sherwin-williams.com.
a) 4 mils wet, 1.7 mils dry per coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.

D. Masonry: Remove efflorescence and chalk.

E. Gypsum Board: Fill minor defects with filler compound; sand smooth and remove dust prior to painting.

F. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

G. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Prime bare steel surfaces.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning in accordance with SSPC-SP 6/NACE No.3. Protect from corrosion until coated.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions.

C. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.

D. Regardless of number of coats specified, apply additional coats until complete hide is achieved.

3.04 PRIMING

A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

B. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to top coat manufacturers.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.06 PROTECTION

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 26 05 00
BASIC ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SECTION INCLUDES

A. Basic Electrical Requirements and materials specifically applicable to Division 26 Sections, in addition to Division 1 - General Requirements. Section includes:
   1. Electrical Identification.
   2. Minor Demolition.
   3. Conductors and Devices.
   4. Raceways and Boxes.
   5. Supporting Devices.

1.03 REGULATORY REQUIREMENTS

A. Conform to NFPA 70 - National Electrical Code, latest edition with amendments as adopted by the City of Des Plaines, IL.

B. Conform to building codes as adopted by the City of Des Plaines, IL.

C. Install electrical Work in accordance with the NECA Standard of Installation.

1.04 DELIVERY, STORAGE AND HANDLING

A. Store and protect all materials as specified under the provisions of Section 01 60 00 and as specified herein.

B. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

C. Ship products to the job site in their original packaging. Receive and store products in a suitable manner to prevent damage or deterioration. Keep equipment upright at all times.

D. Investigate the spaces through which equipment must pass to reach its final destination. Coordinate with the manufacturer to arrange delivery at the proper stage of construction and to provide shipping splits where necessary.

1.05 PROJECT/SITE CONDITIONS

A. Install work in locations shown on Drawings, unless prevented by Project conditions. Drawings have omitted certain branch circuitry in areas for ease of reading. All branch circuitry is to be provided by Contractor.

B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other Sections. Obtain permission from Architect/Engineer before proceeding as specified under modification procedures.

1.06 QUALITY ASSURANCE

A. Provide Work as required for a complete and operational electrical installation.

B. All products shall be designed, manufactured, and tested in accordance with industry standards. Standards, organizations, and their abbreviations as used hereafter, include the following:
   1. American National Standards Institute, Inc (ANSI).
   2. American Society for Testing and Materials (ASTM).
   3. National Electrical Manufacturers Association (NEMA).
   4. Underwriters Laboratories, Inc. (UL).

C. Install all Work in accordance with the NECA Standard of Installation.

1.07 SUBMITTALS

A. Submit all requested items in Division 26 Sections under provisions of Section 01 30 00.

1.08 SUBSTITUTIONS

A. Substitutions will be considered only as allowed within the provisions of Section 01 60 00.

1.09 PROJECT RECORD DOCUMENTS

A. Cooperate and assist in the preparation of project record documents under the provisions of Section 01 78 00.

1.10 PROJECT MANAGEMENT AND COORDINATION

A. Proper project management and coordination is critical for a successful project. Manage and coordinate the Work with all other trades in accordance with Section 01 30 00 requirements. Reliance on the Drawings and Specifications only for exact project requirements is insufficient for proper coordination.

PART 2 PRODUCTS

2.01 WIRING METHODS

A. All locations: Building wire in raceway.

B. Use no wire smaller than 12 AWG for power and lighting circuits, and no smaller than 14 AWG for control wiring.
   1. Use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet.

2.02 WIRE AND CABLE

A. Manufacturers:
   1. Okonite.
   2. Southwire.
   3. Collyer.

B. Building Wire:
   1. Feeders and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation.
   2. Control Circuits: Copper, stranded conductor, 600 volt insulation.
   3. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.

4. Use conductor not smaller than 12 AWG for power and lighting circuits.

C. Locations:
1. Concealed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
2. Exposed Dry Interior Locations: Use only building wire with Type THHN insulation in raceway.
3. Above Accessible Ceilings: Use only building wire with Type THHN insulation in raceway.

2.03 WIRING DEVICES AND WALL PLATES

A. Duplex Convenience Receptacle: Nema 5-20R, duplex, specification grade.
1. Hubbell.
2. Pass .
3. Leviton.
4. Color: Ivory.

2.04 RACEWAY REQUIREMENTS

A. Use only specified raceway in the following locations:
1. Branch Circuits and Feeders:
a. Concealed Dry Interior Locations: Electrical metallic tubing.
b. Exposed Dry Interior Finished Locations: Electrical metallic tubing.
c. Exposed Dry Interior Unfinished Locations: Electrical metallic tubing.
d. All other locations: Galvanized Rigid Metallic Conduit.

B. Size raceways for conductor type installed.
1. Minimum Size Conduit Homerun to Panelboard: 3/4-inch.

2.05 METALLIC CONDUIT AND FITTINGS

A. Conduit:
1. Rigid Steel Conduit: ANSI C80.1.
2. Electrical metallic tubing: ANSI C80.3.
3. Flexible Conduit: UL 1, zinc-coated steel.
a. Liquidtight Flexible Conduit: UL360. Fittings shall be specifically approved for use with this raceway.

B. Conduit Fittings:
1. Metal Fittings and Conduit Bodies: NEMA FB 1.
a. EMT fittings: Use set-screw indentor-type fittings.

2.06 CONDUIT HANGERS

A. Manufacturers:
1. Minerrallac Electric Company.
2. Substitutions: Or Approved Equal.

B. Description:
1. Standard conduit hanger, zinc-plated steel with bolts.
2. Threaded rod and hardware: Plated finish, size and length as required for loading and conditions.

2.07 BEAM CLAMPS

A. Manufacturers:
   1. Appleton.
   2. Midwest.
   3. Raco.

B. Description: Malleable beam clamp, zinc plated steel.

2.08 ELECTRICAL BOXES

A. Manufacturers:
   1. Raco.
   2. Steel City.
   3. Appleton.
   4. Substitutions: Or Approved Equal.

B. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized steel, suitable for installation in masonry:

C. Equipment Support Boxes: Rated for weight of equipment supported; include 2 inch male fixture studs where required.

D. Wet Location Outlet Boxes: Cast aluminum: Cast alloy, deep type, gasket cover, threaded hubs.

2.09 PENETRATION SEALANTS

A. Fire-rated assemblies: Provide firestopping of all penetrations made by Work under this Contract in accordance with provisions of Section 07 84 00 requirements.

B. Thermal and Moisture Protection: Provide thermal and moisture protection made by Work under this Contract of all exterior wall, floor and roof penetrations in accordance with Division 7 requirements.

2.10 WIRE AND CABLE MARKERS

A. Manufacturers:
   1. Brady Model PCPS.
   2. Panduit Model PCM.
   3. T & B Model WM.

B. Description: Cloth type wire markers.

C. Locations: Each conductor at panelboard gutters, pull boxes, and each load connection.

D. Legend:
   1. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.

2.11 CONDUIT MARKERS

A. Location: Furnish markers for each conduit longer than 6 feet.

B. Spacing: 20 feet on center.

C. Color:
   1. 480 Volt System: Orange
   2. 208 Volt System: Black

3. Fire Alarm System: Red.

PART 3 EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Demolition Drawings are based on casual field observation and are intended to identify the limits of the construction site.

B. Beginning of demolition means installer accepts existing conditions.

C. Verify that supporting surfaces are ready to receive work.

D. Electrical boxes are shown on Drawings, in approximate locations, unless dimensioned.
   1. Obtain verification from Architect/Engineer for locations of outlets throughout prior to rough-in.

E. Degrease and clean surfaces to receive wire markers.

F. Verify that mechanical work which is likely to injure conductors has been completed.

G. Completely and thoroughly swab raceway system before installing conductors.

3.02 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove all existing electrical installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Relocate existing fire alarm devices affected by wall, ceiling and floor demolition.

E. Repair adjacent construction and finishes damaged during demolition and extension work.

F. Properly dispose of all ballast to approved ballast recycler. Do not land fill ballasts.

3.03 APPLICATION

A. Neatly train and secure wiring inside boxes, equipment, and panelboards.

B. Route wire and cable as required to meet project conditions.
   1. Wire and cable routing indicated is approximate unless dimensioned.
   2. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

C. Pull all conductors into raceway at same time.

D. Protect exposed cable from damage.

E. Neatly train and lace wiring inside boxes, equipment and panelboards.

F. Support cables above accessible ceilings to keep them from resting on ceiling tiles.

G. Make splices, taps, and terminations to carry full ampacity of conductors without perceptible temperature rise.

H. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

I. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

J. Do not use powder-actuated anchors.

K. Do not drill or cut structural members.

L. Terminate spare conductors with electrical tape.

M. Install wiring devices in accordance with manufacturer's instructions.
   1. Install convenience receptacles at height shown on drawings grounding pole on bottom.
   2. Install specific purpose receptacles at heights shown on Drawings.

N. Install wall plates flush and level.
   1. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
   2. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface-mounted outlets.

END OF SECTION

SECTION 26 05 33.23
SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface raceway systems.

B. Two Cell Surface Metallic Raceway.

C. Two Cell Low Profile Surface Metallic Raceway.

1.02 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. UL 5 - Surface Metal Raceways and Fittings; Current Edition, Including All Revisions.

D. UL 5A - Nonmetallic Surface Raceways and Fittings; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the placement of raceways with millwork, furniture, equipment, etc. installed under other sections or by others.
   2. Coordinate rough-in locations of outlet boxes and conduit as required for installation of raceways provided under this section.
   3. Verify minimum sizes of raceways with the actual conductors and components to be installed.
   4. Notify Architect/Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
   1. Do not install raceways until final surface finishes and painting are complete.
   2. Do not begin installation of conductors and cables until installation of raceways is complete between outlet, junction and splicing points.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets including dimensions, knockout sizes and locations, materials, fabrication details, finishes, service condition requirements, and accessories.
   1. Surface Raceway Systems: Include information on fill capacities for conductors and cables.

1.05 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 RACEWAY REQUIREMENTS

A. Provide all components, fittings, supports, and accessories required for a complete raceway system.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

2.02 SURFACE RACEWAY SYSTEMS

A. Manufacturers:
   1. MonoSystems, Inc: www.monosystems.com/#sle.
   2. Wiremold, a brand of Legrand North America, Inc: www.legrand.us/#sle.
   3. Substitutions: See Section 01 60 00 - Product Requirements.

B. Surface Metal Raceways: Listed and labeled as complying with UL 5.

C. Surface Nonmetallic Raceways: Listed and labeled as complying with UL 5A.

2.03 TWO CELL SURFACE METALLIC RACEWAY

A. Manufacturer:
   1. Wiremold G-4000 Series or equal.

B. Description: UL-5, 4-3/4 inches wide by 1-3/4 inches high, two channel galvanized steel, combination power/data.

C. Finish: Painted, ANSI 61 Gray.

D. Accessories: Transition fittings, divider plates, device mounting straps, couplings, combination power/data cover plates, end plates and all other accessories necessary for a complete system in locations indicated on Drawings.

2.04 TWO CELL LOW PROFILE SURFACE METALLIC RACEWAY

A. Manufacturer:
   1. Wiremold 2400 Series or equal.

B. Description: UL-5, 2 inches wide by 1 inch height, two channel galvanized steel, combination power/data.

C. Finish: Painted, ANSI 61 Color Selected by architect.

D. Accessories: Transition fittings, divider plates, device mounting straps, couplings, combination power/data cover plates, end plates and all other accessories necessary for a complete system in locations indicated on Drawings.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that outlet boxes and conduit terminations are installed in proper locations and are properly sized in accordance with NFPA 70 to accommodate raceways.

C. Verify that mounting surfaces are ready to receive raceways and that final surface finishes are complete, including painting.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Install raceways plumb and level.

D. Secure and support raceways at intervals complying with NFPA 70 and manufacturer's requirements.

E. Close unused raceway openings.

F. Provide grounding and bonding in accordance with Section 26 05 00.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Inspect raceways for damage and defects.

C. Correct wiring deficiencies and replace damaged or defective raceways.

3.04 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.05 PROTECTION

A. Protect installed raceways from subsequent construction operations.

END OF SECTION

SECTION 26 05 83
WIRING CONNECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical connections to equipment and devices not and integral part of the electrical distribution system.

1.02 RELATED REQUIREMENTS

A. Section 26 05 00 - Basic Electrical Requirements.

1.03 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Provide conduit rough-in and electrical connection to powered equipment and devices identified in the Project Manual and on the Drawings. Refer specifically, but not limited to, these Specification Sections for further information:
   1. Section 01 10 00 - Summary: Furniture and equipment furnished or provided by Owner or by others under separate contract.
   2. Section 08 71 00 - Door Hardware: Components electrically operated and/or controlled.
   3. Section 28 10 00 - Access Control: Access control units requiring 120V receptacles.

B. Coordination: Determine connection locations and requirements for equipment and devices furnished or provided under other sections.
   1. Do not rely solely on the Drawings and Project Manual for execution of the Work of this Section.
   2. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions.
   3. Include necessary field evaluation time to inspect connection requirements.
   4. Coordinate with other trades to determine exact rough-in requirements.

C. Sequencing:
   1. Install rough-in of electrical connections before installation of equipment is required.
   2. Make electrical connections before required start-up of equipment.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide wiring device manufacturer’s catalog information showing dimensions, configurations, and construction.

C. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.06 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Products: Listed, classified, and labeled as suitable for the purpose intended.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that equipment is ready for electrical connection, wiring, and energization.

3.02 ELECTRICAL CONNECTIONS

A. Make electrical connections in accordance with equipment manufacturer's instructions.

B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.

D. Provide receptacle outlet to accommodate connection with attachment plug.

E. Provide cord and cap where field-supplied attachment plug is required.

F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

G. Install terminal block jumpers to complete equipment wiring requirements.

H. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

END OF SECTION

SECTION 27 05 29
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other communications work.

1.02 RELATED REQUIREMENTS

A. Section 27 10 00 - Structured Cabling.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
   2. Coordinate work to provide additional framing and materials required for installation.
   3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
   4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
   5. Notify Architect/Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

A. General Requirements:
   1. Comply with the following. Where requirements differ, comply with most stringent.
      a. TIA-569.
      b. NFPA 70.
      c. Requirements of authorities having jurisdiction.
   2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of communications work.
   3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
   4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
   5. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
      a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
      b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Conduit Supports: Straps and clamps suitable for conduit to be supported.
   1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.

2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Cable Supports: Suitable for cables to be supported, including but not limited to J-hooks, bridle rings, drive rings, and flexible harnesses/slings.
   1. Manufacturers:
      a. Eaton Corporation: www.eaton.com/#sle.
      b. nVent; Caddy: www.nvent.com/#sle.
      c. Panduit: www.panduit.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.
   2. Applications:
      a. Do not exceed 4 feet between cable supports.
      b. Maximum Number of Cables per Cable Support:
         1) J-Hooks: 40 percent of fill capacity.
         2) Bridle Rings: 40 percent of fill capacity.
      c. Allowable Cable Types:
         1) J-Hooks: Category 3, Category 5e, and Category 6.
         2) Bridle Rings with Saddle: Category 3, Category 5e, and Category 6.
   3. Comply with TIA-569.
   4. Cable Supports Installed in Spaces Used for Environmental Air: Plenum rated; listed and labeled as complying with UL 2043, suitable for use in air-handling spaces.
   5. J-Hooks: Noncontinuous cabling support with removable top retainer clip.
      a. Material: Use galvanized steel, factory-painted steel, or stainless steel.
      b. Provide support surfaces with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported.
      c. Provide multitiered J-hooks where required to support multiple cabling systems.
   6. Bridle rings: Noncontinuous circular cabling support.
      a. Material: Use galvanized steel, painted steel, or stainless steel.
      b. Provide integral saddle with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported where indicated.

D. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.

E. Metal Channel/Strut Framing Systems:
   1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
   2. Comply with MFMA-4.

F. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.

G. Anchors and Fasteners:
   1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive support and attachment components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install hangers and supports in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.

C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

D. Unless specifically indicated or approved by Architect/Engineer, do not provide support from suspended ceiling support system or ceiling grid.

E. Unless specifically indicated or approved by Architect/Engineer, do not provide support from roof deck.

F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.

G. Equipment Support and Attachment:
   1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
   2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
   3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
   4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

H. Secure fasteners in accordance with manufacturer's recommended torque settings.

I. Remove temporary supports.

END OF SECTION

SECTION 27 10 00
STRUCTURED CABLING - COMMSCOPE SYSTIMAX/UNIPRISE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Copper Cable and Terminations:
   1. Copper twisted pair cables.
   2. Modular jacks.

B. Communications faceplates.

1.02 REFERENCE STANDARDS

A. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. TIA-568 (SET) - Commercial Building Telecommunications Cabling Standard Set; 2020.

D. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards; 2009c, with Addendum (2016).

E. TIA-569 - Telecommunications Pathways and Spaces; 2019e.

F. TIA-606 - Administration Standard for Telecommunications Infrastructure; 2021d.

G. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises; 2019d.

H. UL 2024 - Standard for Cable Routing Assemblies and Communications Raceways; Current Edition, Including All Revisions.

I. UL 94 - Tests for Flammability of Plastic Materials for Parts in Devices and Appliances; Current Edition, Including All Revisions.

J. UL 444 - Communications Cables; Current Edition, Including All Revisions.

K. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers; Current Edition, Including All Revisions.

L. UL 1863 - Communications-Circuit Accessories; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate work to avoid placement of other utilities or obstructions within spaces dedicated for communications equipment.
   2. Coordinate arrangement of communications equipment with dimensions and clearance requirements of actual equipment to be installed.
   3. Notify Architect/Engineer of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

1.05 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Company with at least 3 years experience in installation and testing of structured cabling.
   2. Employing BICSI Registered Communications Distribution Designer (RCDD).
   3. Employing Certified BICSI Technicians (TECH) for supervision of work.
   4. Certified by structured cabling system manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions before, during, and after installation.

1.08 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Extended Network Infrastructure System Warranty:
   1. Provide 25-year manufacturer warranty for passive structured cabling system components.
   2. Comply with manufacturer's requirements for warranty validation including, but not limited to:
      a. Use only products from manufacturer's approved end-to-end solution.
      b. Obtain products from manufacturer's authorized supplier.
      c. Install products in accordance with manufacturer's instructions.
      d. Perform testing and submit test reports required by manufacturer.
      e. Complete warranty documentation in Owner's name and register with manufacturer within required time period.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: CommScope, Inc; SYSTIMAX; www.commscope.com/#sle.

B. Substitutions are not allowed.

C. Source Limitations: Provide structured cabling system components produced by single manufacturer and obtained from single supplier.

D. The items listed are not necessarily all-inclusive. The Owner must be consulted in all cases where a relevant category is not included, or when a part number has been discontinued.

2.02 STRUCTURED CABLING SYSTEM - GENERAL REQUIREMENTS

A. Comply with the following:
   1. TIA-568 (SET).
   2. TIA-569.
   3. TIA-607.

4. NFPA 70.
5. Requirements of authorities having jurisdiction.
6. Applicable local codes.

2.03 COPPER CABLE AND TERMINATIONS

A. Copper Twisted-Pair Cables:
   1. Comply with TIA-568.2; listed as complying with UL 444.
   2. Cable Applications: Use listed NFPA 70 Type CMP plenum cable unless otherwise indicated.
   3. Products:
      a. Part numbers specified are for boxes or reels with 1,000-foot cable length unless otherwise indicated.
      b. SYSTIMAX GigaSPEED XL Category 6 U/UTP Cable, plenum CMP rated, 4-pair, 23 AWG; 2071E Series.
         1) Cable Jacket Color - Network: White (WHT), P/N 700208101 for Skokie and Des Plaines Main Building.
         2) Cable Jacket Color - Network: Blue (BLU), P/N 700208093 for Des Plaines Lee Building Only

B. Modular Jacks:
   1. Description: RJ-45, nonkeyed, 8-position modular jacks with insulation displacement connectors (IDC); high-impact thermoplastic housing.
   2. Comply with TIA-568.2, match cable; UL 1863 listed.
   3. Color code for both T568A and T568B wiring configurations.
   4. Plug Insertion Life: 750 times, minimum.
   5. Flammability: Comply with UL 94.
   6. Products:
      a. SYSTIMAX GigaSPEED XL MGS400 Series Category 6 U/UTP Modular Jacks.
         1) Mountable at 90 or 45 degrees in M-series faceplates.
         2) Color - Network: Black, P/N 700206667.

2.04 COMMUNICATIONS FACEPLATES

A. Listed as complying with UL 514C.

B. Compatible with specified modular jacks/inserts.

C. Provide blank inserts/dust covers for unused ports.

D. Products:
   1. CommScope M Series Surface Mount Boxes, thermoplastic, with openings for M Series modular jacks.
      a. 1 port, thermoplastic, white; Model SMB-1P-262; P/N 760248521.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive system components.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's written instructions.

B. Comply with BICSI N1 and TIA-568 (SET).

C. Cable Installation in Raceway:
   1. Do not damage cables or exceed manufacturer's recommended maximum pulling tension.
   2. Use wire-pulling lubricant recommended by manufacturer where necessary.

D. Identify components in accordance with TIA-606.

E. Provide grounding and bonding in accordance with TIA-607.

F. Telecommunication Pathways
   1. Coordinate layout and installation of telecommunications pathways and cabling with the owner's telecommunications and LAN equipment.
   2. Telecommunication pathways should be routed following building lines and major floor access routes such as corridors and hallways. Pathways should not cross over end user work areas such as offices, conference rooms, classrooms or public restrooms. All deviations from straight runs should be made at right angles. Diagonal pathways are unacceptable, unless approved by the Owner.
   3. Route pathway to clear of obstructions, such as electrical equipment, HVAC ducts, large pipes, and structural beams within the building.

3.03 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Provide equipment, tools, and supplies required to accomplish inspection and testing.

C. Test copper twisted pair cables in accordance with TIA-568.2.

D. Provide additional testing as required by manufacturer for network infrastructure system warranty.

3.04 PROTECTION

A. Protect installed structured cabling system components from subsequent construction operations.

END OF SECTION

SECTION 28 10 00
ACCESS CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Access control system (ACS) requirements.

B. Access control units and software.

C. Access control point peripherals, including readers.

D. Accessories.

E. Security field controllers.

1.02 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 08 71 00 - Door Hardware: Electrically operated door hardware, for interface with access control system.
   1. Includes door hardware with integral request to exit devices.

C. Section 26 05 00 - Basic Electrical Requirements

D. Section 26 05 83 - Wiring Connections

E. Section 27 10 00 - Structured Cabling: Data cables for access control system IP network connections.

1.03 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. UL 5 - Surface Metal Raceways and Fittings; Current Edition, Including All Revisions.

D. UL 294 - Access Control System Units; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other installers to provide suitable door hardware as required for both access control functionality and code compliance.
   2. Coordinate the placement of readers with millwork, furniture, equipment, etc. installed under other sections or by others.
   3. Coordinate the work with other installers to provide power for equipment at required locations.
   4. Notify Architect/Engineer of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

B. Preinstallation Meetings:
   1. Conduct meeting with facility representative to review reader and equipment locations.

2. Conduct meeting with facility representative and other related equipment manufacturers to discuss access control system interface requirements.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Include plan views indicating locations of system components and proposed size, type, and routing of conduits and/or cables. Include elevations and details of proposed equipment arrangements. Include system interconnection schematic diagrams. Include requirements for interface with other systems.

C. Product Data: Provide manufacturer's standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, dimensions, finishes, service condition requirements, and installed features.

D. Test Reports: Indicate satisfactory completion of required tests and inspections.

E. Certification: The installer shall Furnish, in writing, proof of compliance with system manufacturer's service and installation certification programs.

F. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation, and starting of system.

G. Maintenance contracts.

H. Project Record Documents: Record actual locations of system components and installed wiring arrangements and routing.

I. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
   1. Include contact information for entity that will be providing contract maintenance and trouble call-back service.

J. Maintenance Data: Maintenance and repair procedures.

1.06 QUALITY ASSURANCE

A. Comply with the following:
   1. NFPA 70.
   2. The requirements of the local authorities having jurisdiction.
   3. Applicable TIA/EIA standards.

B. Manufacturer Qualifications: Firms with a minimum of 5 years experience in manufacturing equipment of the type and capacities indicated that have a record of successful in-service performance. The prime system manufacturer shall maintain a service center capable of providing training, parts, and emergency maintenance and repairs for the overall system.

C. Manufacturer's Field Representative: Factory representative to be fully certified for all system components and possess minimum 2 years document system design / application experience.

D. Installer Qualifications: Factory authorized sales and service representative for the system submitted. Installer must be capable of providing emergency maintenance and repairs of the overall system at the project site within 24 hours maximum response time. The installer shall have a local office staffed with factory trained technicians, fully capable of supervising installation, system start-up, providing training and servicing of both hardware and software for systems of similar complexity and function as the system described in this specification.
   1. Installing contractor shall be licensed in the State of Illinois to provide the service and equipment described herein. Proof of license(s) must be submitted to the architect prior to award of contract.

E. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

F. Within six (6) months of substantial completion, provide optional maintenance/support contract for ongoing service and maintenance of ACS to Owner. Contract acceptance shall be at the sole discretion of the Owner.

G. On-going technical support for the access control system from the manufacturer for a minimum of three years. Support shall include:
   1. Direct end user support
   2. Support for current software version including all software updates
   3. Phone and email support during normal business hours
   4. Emergency after-hours phone support
   5. Remote assistance from Certified technician for software configuration and maintenance
   6. Knowledge base access.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.

B. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design:
   1. Acre Security; Access It!; acresecurity.com
   2. Substitution: No Substitutions

2.02 ACCESS CONTROL SYSTEM REQUIREMENTS

A. Provide new access control system consisting of all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system that provides the functional intent indicated.

B. Access Control Software shall be Access It! from Acre Security, no substitutions shall be acceptable. The ACS shall use a single seamlessly integrated Microsoft SQL relational database for all functions utilizing a fully multi-tasking multi-threading Microsoft Windows operating system.

C. The Access Control System shall operate on a Virtualization Platform provided by the Owner. The Vendor will coordinate requirements and installation of ACS, supported database engine, and server requirements with Owner. Coordinate integration of system components into the Owners IT infrastructure.

D. The owner will provide 5 workstations dedicated the operation and monitoring of the ACS. Vendor will coordinate the installation and integration of the workstations into ACS.
   1. Workstation Locations:
      a. Des Plaines Campus
         1) Public Safety
         2) Facility Management
         3) IT Management
      b. Skokie Campus
         1) Public Safety
         2) Facility Management

E. System Battery Backup: Provide batteries/uninterruptible power supplies (UPS) as required for 60 minutes full operation.

F. Surge Protection:
   1. Provide surge protection for readers and door strikes/locks.
   2. Provide equipment power surge protection where electrical distribution system surge protection is not provided.

G. Interface with Other Systems:
   1. Provide products compatible with other systems requiring interface with access control system.
   2. Interface with electrically operated door hardware.
      a. Capable of locking/unlocking/releasing controlled doors.
      b. Capable of receiving input from integral door hardware switches.

H. Provide products listed, classified, and labeled as suitable for the purpose intended.
   1. Access Control Units and Readers: Listed and labeled as complying with UL 294.

2.03 ACCESS CONTROL POINT PERIPHERALS

A. Provide devices suitable for operation under the service conditions at the installed location.

B. Door Locking Devices (Electric Strikes and Magnetic Locks): Comply with Section 08 71 00.

2.04 COMPONENTS (BASIS OF DESIGN)

A. Products: Provide products listed and classified by Underwriters Laboratories Inc. (UL 294) as suitable for purpose specified and indicated.

B. System Control Processor:
   1. Sequence of Operation: Integrated access system.
   2. Report Requirements: User configurable.
   3. Product:
      a. Mercury Security: mercury-security.com
         1) MP-1501 PoE+ Controller
         2) MP-1502 Controller
         3) MP-4502 Controller
         4) LP-2500 Controller
         5) MR-50-S3 Controller
         6) MR 52-S3 Controller
         7) MR-62e Subpanel
         8) MR16IN Serial I/O Interface Panel
         9) MR16Out Serial I/O Interface Panel

C. Encoded Readers:
   1. Manufacturer: HID Global: www.hidglobal.com.
   2. Product:
      a. HID Signo Reader
         1) Model 20 - Mullion Mount
         2) Model 20K - Mullion Mount with Keypad
         3) Model 40 - Standard Mount
         4) Model 40K - Standard Mount with Keypad
      b. Provide manufacturer's standard kit for glazed side lite mounting applications where indicated on drawings.

D. Panel Enclosure and Power Supply
   1. Manufacturer: LifeSafety Power; www.lifesafetypower.com
   2. Product: FlexPower MCL
      a. P/N: FPO150-C8NL4E4M
         1) Power Output: 150W
         2) Size: 24.0H x 20.0W x 6.5D in
         3) With 12V Back-up Gel Type Battery
         4) (8) Lock Control outputs with solid state circuit breakers.
         5) Network Module providing remote monitoring of power supply and battery.

E. Encoded Credentials:
   1. Quantity: 100.
   2. Manufacturer: HID Global: www.hidglobal.com.
   3. Product: iCLASS SE Card - 300.
      a. P/N: 3003VG1MV
      b. Plain White with Gloss Finish with Magnetic Stripe
      c. Vertical Slot Punch
      d. Sequential Matching Encoded/Printed

F. Electric Strikes:
   1. As specified in Section 08 71 00.

G. Electric Locks:

1. As specified in Section 08 71 00.

H. Door Contact Switches
   1. Door contacts will be surface mounted or flush mounted on the opposing side of the door from the hinges. The switch will be mounted on the top of the door and will be no further than three inches from the interior portion of the doorframe.
   2. Surface mount switches will have armored cable between the switch and the cable entrance hole in the door.
   3. Surface mount switches will have tamper resistant screws to attach switch to door and doorframe. A screw-locking adhesive such as 'Loctite' thread locker will be used to secure all screws.
   4. Flush mount switches are to be mounted in the top portion (header) of the doorframe and in the adjoining portion of the door. The holes for flush mounted door switches must be drilled the exact size for the switch being used. A tight friction fit must be achieved.
   5. No hinge contacts are to be used.
   6. Basis of Design
      a. Door Contact, Recessed Wide Gap Contact Set
         1) Manufacturer: Royne Industries LLC, dba NASCOM: www.nascominc.com
         2) Product: Nascom's N1178 Series.
      b. Door Contact, Recessed Wide Gap Contact Set with Magnet designed for steel and aluminum U-channel doors.
         1) Manufacturer: Royne Industries LLC, dba NASCOM: www.nascominc.com
         2) Product: Nascom's N1178 SHK Series.
      c. Door Contact, Surface-Mount Contact Set
         1) Manufacturer: Royne Industries LLC, dba NASCOM: www.nascominc.com
         2) Product: Nascom's N505AS Series.
            a) 24" Armored Cable Lead Protection.
            b) Extruded Anodized (Type II) Aluminum.
      d. Door Contact, Curtain` Door Contact Set
         1) Manufacturer: Royne Industries LLC, dba NASCOM: www.nascominc.com
         2) Product: Nascom's N505ASCD Series.
            a) 24" Armored Cable Lead Protection.
            b) Extruded Anodized (Type II) Aluminum.
      e. Door Contact, Track-Mount Overhead Door Contact Set
         1) Manufacturer: Royne Industries LLC, dba NASCOM: www.nascominc.com
         2) Product: Nascom's N505AUTM Series.
            a) 24" Armored Cable Lead Protection.
            b) Extruded Anodized (Type II) Aluminum.

I. Mortise Cylinder Keyswitch Station
   1. Manufacturer: Alarm Controls: www.alarmcontrols.com
   2. Product: MCK-1
      a. SPDT Momentary Action
      b. 1.75" Wide Faceplate
      c. Mortise cylinder for interior arming/disarming
         1) Provide Mortise Cylinder matching the Owner's door hardware specifications.

J. WIRE AND CABLE

1. All wire and cable shall be underwriter's laboratories (UL) listed, and shall meet all national, state and local code requirements for its application.
2. All wire and cable shall meet individual system or subsystem manufacturer specifications.
3. All wire and cable shall be plenum type cable.
4. All insulated wire and cable shall conform to the minimum requirements of insulated cable engineers association (ICEA) standards.
5. Wire and cable shall comply with the applicable requirements of the national electrical code (NEC), latest edition, in regards to cable construction and usage.
6. The conductors of wires shall be copper, and have a conductivity in accordance with the standardization rules of the institute of electrical and electronics engineers, inc. (IEEE). The conductor and each strand shall be round and free of kinks and defects
7. All cable shall be shielded where necessary for interference-free signals.
8. Color coding shall be accomplished by using solidly colored insulation. Grounding conductors, where insulated, shall be colored solid green or identified with green color as required by the national electric code (NEC).
9. Minimum wire types and sizes:
    a. PoE Cable
        1) Max Distance: 295 Feet
        2) Cable Type: Twisted pair, 4 pairs Category 6
        3) Make/Model: CommScope Systimax Gigaspeed XL - NO SUBSTITUTES
        4) Installation to be certified for 20 Year Systimax Warranty
    b. Reader Cable (OSPD)
        1) Max Distance: 500 Feet
        2) Cable Type: RS-485, 2 Pair 22AWG Shield, PVC Outer Jacket.
        3) Make/Model: Belden 3107 A or equivalent
    c. Door Strike Cable
        1) Max Distance: 500 Feet
        2) Cable Type: 2 conductor stranded 18 AWG with overall shield
        3) Make/Model: Belden 9740 or equivalent
    d. Output Cable
        1) Max Distance: 500 Feet
        2) Cable Type: 2 conductor stranded 18 AWG with overall shield
        3) Make/Model: Belden 9740 or equivalent
    e. Input Cable
        1) Max Distance: 500 Feet
        2) Cable Type: 2 conductor stranded 22 AWG with overall shield
        3) Make/Model: Belden 8740 or equivalent
    f. RS-485 cable with power
        1) Max Distance: 4000 Feet
        2) Cable Type: 4 conductor stranded, twisted pair, 2 pairs, 22 ~ 16 AWG, shielded
        3) Make/Model: Belden 9402 or equivalent
10. Labeling
    a. Verify labeling scheme with owner prior to producing labels and before system programming.

b. Mark all cables in common at both ends using a permanent method such as self laminating machine printed cable marking tape. The tags shall be attached to the wire and cable in an accessible location so that they can easily be read. Tags shall be installed when wire and cables are installed. Labeling shall agree with record drawings.
c. Place wire identification numbers at each end of the conductor involved by using sleeve type, heat shrinkable markers. The markers shall be installed so as to be readable from left to right or top to bottom.
d. Mark all connectors with common designations for mating connectors. The connector designations shall be indicated on the record drawings.

11. Any other items/accessories required for installation, testing, and commissioning of the Access Control System

K. SURFACE RACEWAY SYSTEMS
1. Manufacturers:
a. Hubbell Incorporated: www.hubbell.com/#sle.
b. MonoSystems, Inc: www.monosystems.com/#sle.
c. Wiremold, a brand of Legrand North America, Inc: www.legrand.us/#sle.
d. Substitutions: See Section 01 60 00 - Product Requirements.
2. Surface Metal Raceways: Listed and labeled as complying with UL 5.
3. Accessory Device Boxes: Suitable for the devices to be installed; color to match raceway.

L. Power Transfer Devices and Door Loops
1. Manufacturers:
a. Royne Industries LLC, dba NASCOM: www.nascominc.com
b. SDC Security Door Controls: www.sdcsecurity.com
c. Keedex: www.keedex.com
d. Substitutions: See Section01 60 00-Product Requirements.
2. Products:
a. Flex Conduit Bulk
1) K-USS-FLX.
b. Connector Kits - Base, 1 connector w/ C clip, set screw and installation
1) K-DLCK
c. Stainless Steel End Caps with stainless screws
1) K-DS-EC
d. Door Loop Covers
1) K-DLACOVER

M. Any other items/accessories required for installation, testing, and commissioning of the Access Control System

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine pathway elements intended for cables. Check for raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation.

B. Verify all dimensions by field measurements. Verify site conditions and dimensions of equipment to ensure proper installation of equipment.

C. Verify that ratings and configurations of system components are consistent with the indicated requirements.

D. Verify that mounting surfaces are ready to receive system components.

E. Coordinate layout and installation of telecommunications pathways and cabling with the owner's telecommunications and land equipment.

F. Examine roughing-in for control cable systems to Controllers, card readers, and other cable-connected devices to determine the best retrofit method of providing cables into an existing door frame environment. Verify the actual "behind the wall and frame" structural elements before cutting or attempting to fish cables into the existing wall or frame. Surface mount raceway may be acceptable upon Owner approval.

G. Verify that branch circuit wiring installation is completed, tested, and ready for connection to system.

H. Verify that conditions are satisfactory for installation prior to starting work. Proceed with installation only after actual conditions have been researched.

3.02 COORDINATION OF TRADES

A. Coordinate system installation with related trades including, but not limited to, electrical contractor and carpentry contractor.
   1. Coordinate installation of electrified door hardware.
   2. Coordinate acquisition of electrical installation instructions with carpentry contractor and electrical contractor.

B. ACS contractor to be in attendance at project meetings to arrange coordination of related trades.

C. Prior to installation, coordinate location of conduit stubs and related electrical rough-in components for ACS installed by electrical contractor.

D. Obtain electrical instructions and related electrical door hardware components to ensure coordination of electrified door hardware with electrical systems.

E. Act as liaison between trades performing work in Related Section to ensure all documents and accessories related to the ACS are provided in such a manner as to ensure smooth installation and commissioning of the ACS.

3.03 INSTALLATION

A. Install access control system in accordance with NECA 1 (general workmanship).

B. Install components and commission system in accordance with manufacturer's specifications, recommendations and instructions.

C. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
   1. Use suitable listed cables in wet locations, including underground raceways.
   2. Use suitable listed cables for vertical riser applications.
   3. Use listed plenum rated cables in spaces used for environmental air.
   4. Install wiring in conduit for the following:
      a. Where required for rough-in.
      b. Where required by authorities having jurisdiction.

c. Where exposed to damage.
d. Where installed outside the building.
e. For exposed connections from outlet boxes to devices.

5. Conduit: Comply with Section 26 05 00.
6. Conceal all cables unless specifically indicated to be exposed. Surface Mount Raceway may be acceptable upon Owner approval
7. Where feasible, reuse existing Electric Power Transfer devices for integration into ACS. In new applications, use power transfer hinges for concealed connections to door hardware.
8. Cables in the following areas may be exposed, unless otherwise indicated:
   a. Equipment closets.
   b. Within joists in areas with no ceiling.
9. Route cabling pathways following building lines and major floor access routes such as corridors and hallways. Pathways should not cross over end user work areas such as classrooms, offices, conference rooms, work areas or public restrooms. Make deviations from straight runs at right angles; diagonal pathways are unacceptable unless approved by Owner.
10. Route pathways clear of obstructions such as electrical equipment, HVAC ducts, large pipes, and structural beams within the building.
11. Implement installation of cabling, wiring, and equipment to facilitate servicing, maintenance and repair or replacement of equipment and components. Where feasible, connections to equipment and components should support easy disconnection, with a minimum of interference with other installations.
12. Do not exceed manufacturer's recommended maximum cable length between components.

D. Provide grounding and bonding in accordance with Section 26 05 00.

E. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 84 00.

F. Identify system wiring and components in accordance with Section 26 05 00.

G. Install low voltage wire and make low voltage wiring connections to electrified door hardware devices.

H. Provide wire sized according to component manufacturer's requirements and recommendations, including those for electrified locking hardware.

I. Install power supplies for electrified door hardware.

J. Provide (1) CAT6 Data Outlet at each Panel Enclosure. Route cabling and terminate the nearest data closet. Coordinate locations, routing, and data termination with owner.

K. Provide dedicated duplex receptacle for access control panel. Coordinate exact location with owner prior to rough-in.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Manufacturer Services: Furnish services of technician to supervise installation, adjustments, final connections, system testing and commissioning, and to train Owner personnel.

C. Prepare and start system in accordance with manufacturer's instructions.

D. Program system parameters according to requirements of Owner.

E. Test for proper interface with other systems.

3.05 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.06 WARRANTY

A. See Section 01 78 00-Closeout Submittals, for additional warranty requirements.

B. Provide minimum one year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

3.07 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

B. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.

C. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
   1. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
      a. Include applicable portion of O&M manuals.
      b. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
      c. Provide one extra copy of each training manual to be included with operation and maintenance data.
   2. Provide minimum of one day of training per campus.
      a. Instructor: Manufacturer's authorized representative.
      b. Location: At project site.

3.08 PROTECTION

A. Protect installed system components from subsequent construction operations.

3.09 MAINTENANCE

A. See Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide to Owner, at no extra costs, a separate manufacturers maintenance and support services for the access control system for two years from date of Substantial Completion; Include support for software version releases, software upgrades, and system health checks. Included direct user access to support personnel for troubleshooting and consultation via phone, email, and other electronic means.
   1. Include technical phone support for after hours emergency.
   2. Remote assistance from certified technician for software configuration and maintenance.
   3. Upon expiration of two year agreement, support services can be renewed for successive one year periods.

C. Provide to Owner, a proposal as an alternate to the base bid, a separate maintenance contract for the service and maintenance of access control system and components for two years from date of Substantial Completion; Include a complete description of preventive maintenance, systematic examination, adjustment, cleaning, inspection, and testing, with a detailed schedule.
   1. As part of this maintenance contract, conduct site visit at least once every three months to perform inspection, testing, and preventive maintenance. Submit report to Owner indicating maintenance performed along with evaluations and recommendations.

END OF SECTION