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SECTION 011000
SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Project information.
- 2. Work covered by Contract Documents.
- 3. Work under separate contracts.
- 4. Access to site.
- 5. Coordination with occupants.
- 6. Work restrictions.
- 7. Specification and drawing conventions.
- 8. Miscellaneous provisions.

- B. Related Requirements:

- 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: Window Replacement Project at McIntosh Elementary School, 525 North Pierpont Avenue, Rockford, IL 61101.
- B. Owner: Board of Education of Rockford School District No. 205, 501 Seventh Street, Rockford, Illinois 61104.
- C. Architect: Richard L Johnson Associates, Inc., 4703 Charles Street, Rockford, IL 61108.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of the Project is defined by the Contract Documents and consists of Window Replacement.
 - 1. A separate contract will be awarded for Asbestos Abatement work outside of this project.

- B. Contractor is responsible for construction means, methods and sequencing. Architect will not have control over, be in charge of, or be responsible for construction means, methods, techniques, sequences, procedures or safety precautions and programs in connection with the Work, as these are solely within the responsibility of the Contractor. Architect shall not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.
- B. Concurrent Work: Owner will award a separate contract for the following construction operations at the project site. Those operations will be conducted simultaneously with work under the contract.
 - 1. An Environmental Demolition Contractor (Asbestos Abatement) will be removing existing windows prior to new window installation. These openings will be watertight prior to window and door replacement construction phase of this project.
 - 2. The Environmental Demolition Contractor(Asbestos Abatement) will be responsible for making sure that, after they have remove any and all of the existing windows, that they are required to provide a weather-tight exterior seal as well as an interior seal, prior to the window subcontractor starting his scope of work.
 - 3. Once the Window Contractor removes any of the Demolition Contractor's weather-tight seals, it will be the Window Contractor's responsibility to provide any and all exterior and interior weather-tight seals as required to complete their scope of work.

1.6 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
 - 1. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.7 COORDINATION WITH OCCUPANTS

- A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Normal business working hours will be 7:00 a.m. to 3:30 p.m., Monday through Friday. However, Contractor can work weekends and nights with prior notification to the Owner.
- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
- D. Nonsmoking Building: Smoking is not permitted within the building or anywhere on the site.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

DIVISION 01 – GENERAL REQUIREMENTS
SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Provide on Contractor's letterhead.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue through Owner supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 10 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

- B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's construction schedule.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.
- B. The combined overhead and profit included in the total cost to the Owner for a change in the Work shall be based on the following schedule:
1. For the Contractor, for Work performed by the Contractor's own forces, twelve percent of the cost.
 2. For the Contractor, for Work performed by the Subcontractor's, five percent of the amount due the Subcontractors.
 3. For each Subcontractor involved, for Work performed by the Subcontractor's own forces, five percent of the cost.
 4. For each Subcontractor involved, for Work performed by the Subcontractor's Sub-subcontractors, five percent of the amount due the Sub-subcontractor.
 5. In order to facilitate checking of quotations for extras and credits, all proposals, except those so minor that their propriety can be seen by inspection, 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.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Work Change Directive: Architect may issue a Construction Work Change Directive on AIA Document G714 Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

END OF SECTION 012600

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 012900
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of payment.

- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
2. Arrange schedule of values consistent with format of AIA Document G703.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
6. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
7. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the 10th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect and/or Project Manager will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect or Program Manager by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of values.
 - 3. Contractor's construction schedule (preliminary if not final).
 - 4. Submittal schedule (preliminary if not final).
 - 5. List of Contractor's staff assignments.
 - 6. List of Contractor's principal consultants.
 - 7. Copies of building permits.
 - 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 9. Initial progress report.
 - 10. Certificates of insurance and insurance policies.
 - 11. Performance and payment bonds.

- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
 - 1. Evidence of completion of Project closeout requirements.
 - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 - 3. Updated final statement, accounting for final changes to the Contract Sum.
 - 4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
 - 5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
 - 6. AIA Document G707-1994, "Consent of Surety to Final Payment."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100

PROJECT MANAGEMENT & COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination drawings.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.5 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Architect.
 - 6. RFI number, numbered sequentially.
 - 7. RFI subject.
 - 8. Specification Section number and title and related paragraphs, as appropriate.
 - 9. Drawing number and detail references, as appropriate.
 - 10. Field dimensions and conditions, as appropriate.
 - 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 12. Contractor's signature.
 - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: AIA Document G716.
 - 1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 - 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

1.8 PROJECT MEETINGS

- A. General Contractor: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, and Architect, within three days of the meeting.
- B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect.
 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Construction waste management and recycling.
 - u. Parking availability.

- v. Office, work, and storage areas.
- w. Equipment deliveries and priorities.
- x. First aid.
- y. Security.
- z. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Progress Meetings: General Contractor to conduct progress meetings at weekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.

4. Minutes: The Architect will be responsible for conducting the meeting and will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 013300
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow 5 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 - 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 - 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.

4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Contractor.
 - 7) Name of firm or entity that prepared submittal.
 - 8) Names of subcontractor, manufacturer, and supplier.
 - 9) Category and type of submittal.
 - 10) Submittal purpose and description.
 - 11) Specification Section number and title.
 - 12) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 13) Drawing number and detail references, as appropriate.
 - 14) Indication of full or partial submittal.
 - 15) Transmittal number, numbered consecutively.
 - 16) Submittal and transmittal distribution record.
 - 17) Remarks.
 - 18) Signature of transmitter.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements:

1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will return two copies.
 3. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 4. Submit Product Data before or concurrent with Samples.
 5. Submit Product Data in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of Product Data unless otherwise indicated. Architect will return two copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
 3. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - b. Two opaque (bond) copies of each submittal. Architect will return one copy.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Submit product schedule in the following format:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- K. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- L. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- M. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- N. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- O. Schedule of Test and Inspections: Comply with requirements specified in Section 014000 "Quality Requirements".
- P. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Contractor's Review Stamp: review each submittal with a uniform, review stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's review stamp and will return them without action.
- B. Action Submittals: Architect's review is performed to determine general conformance with the design concept set forth in the Contract Documents. Review does not relieve Contractor of sole responsibility for means, methods, sequencing, scheduling of work, verification of quantities and dimensions or the performance of the work in a safe manner. No comments on the shop drawings will relieve the Contractor from performing the work in a manner consistent with the Contract Documents. Architect's review will indicate action mark as follows:
 - 1. Reviewed.
 - 2. Note Comments.
 - 3. Rejected.
 - 4. Not reviewed/Outside scope of Services.
 - 5. Resubmit After Required General Contractor Review.
 - 6. Revise.
 - 7. Resubmit.
- C. Subcontractors are not to use shop drawings and submittals to ask questions or request information. All questions must be asked through the RFI.
- D. Architect is not responsible for correcting errors in the shop drawings or submittals.
- E. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- F. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- G. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 014200
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in the following list:
 - 1. AA – Aluminum Association (The).
 - 2. AIA - American Institute of Architects (The); www.aia.org.
 - 3. AISC - American Institute of Steel Construction; www.aisc.org.
 - 4. AISI - American Iron and Steel Institute; www.steel.org.
 - 5. ANSI - American National Standards Institute; www.ansi.org.
 - 6. ASTM - ASTM International; www.astm.org.
 - 7. AWWA - American Wood Protection Association; www.awpa.com.
 - 8. CSI - Construction Specifications Institute (The); www.csinet.org.
 - 9. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
 - 10. DHI - Door and Hardware Institute; www.dhi.org.
 - 11. GANA - Glass Association of North America; www.glasswebsite.com.
 - 12. ICBO - International Conference of Building Officials; (See ICC).
 - 13. ICC - International Code Council; www.iccsafe.org.
 - 14. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
 - 15. NFPA - National Fire Protection Association; www.nfpa.org.
 - 16. NFPA - NFPA International; (See NFPA).
 - 17. NFRC - National Fenestration Rating Council; www.nfrc.org.
 - 18. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
 - 19. SPIB - Southern Pine Inspection Bureau; www.spib.org.
 - 20. UL - Underwriters Laboratories Inc.; www.ul.com.
 - 21. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
 - 22. WDMA - Window & Door Manufacturers Association; www.wdma.com.
 - 23. WWPA - Western Wood Products Association; www.wwpa.org.

- B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. ICC - International Code Council; www.iccsafe.org.
 2. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 2. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 3. DOE - Department of Energy; www.energy.gov.
 4. EPA - Environmental Protection Agency; www.epa.gov.
 5. FG - Federal Government Publications; www.gpo.gov.
 6. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
 7. OSHA - Occupational Safety & Health Administration; www.osha.gov.
- D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. FED-STD - Federal Standard; (See FS).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 015000

TEMPORARY FACILITIES & CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

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

1.4 INFORMATIONAL SUBMITTALS

- A. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. None.

2.2 TEMPORARY FACILITIES

- A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
 - 1. Store combustible materials apart from building.
- B. Portable Toilet Facilities - All Contractors can use the existing toilet rooms in the building.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

- D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- E. Temporary Elevator Use if Available: Use of existing elevators is permitted.
- F. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

END OF SECTION 015000

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 014200 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

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

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

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

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

- C. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning and final cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 - a. Refer to Unit Specifications.
2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 1. Examine walls for suitable conditions where products and systems are to be installed.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Temporary Support: Provide temporary support of work to be cut.
- C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Proceed with patching after construction operations requiring cutting are complete.

- F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 3. Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS AND FINAL CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 3. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
 4. Contractor shall provide final cleaning of all new glass and aluminum window frames.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.
- K. Provide final cleaning of all disturbed areas. Clean all glass and frames.

3.7 STARTING AND ADJUSTING

- A. Confirm proper operation of components. Remove malfunctioning units, replace with new units and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

END OF SECTION 017300

SECTION 017419

CONSTRUCTION WASTE MANAGEMENT & DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous construction waste.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
 - 2. Provide plywood under the wheels of the dumpsters.

- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

3.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 017700
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for progress cleaning of Project site.
 - 2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
 - 5. Submit test/adjust/balance records.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 3. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
 - 4. Participate with Owner in conducting inspection and walkthrough.
 - 5. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 6. Complete final cleaning requirements, including touchup painting.
 - 7. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Preliminary procedures: Before requesting final inspection for determining final completion, complete the following:
 1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect, will return annotated file.
 - b. Three paper copies. Architect will return two copies.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1.10 ELECTRONIC CLOSEOUT DOCUMENTATION

- A. General: Provide a complete project Closeout Documentation Package in electronic format. This package shall include:
 - 1. Project Record Documents.
 - 2. Approved submittals.
 - 3. Operation and Maintenance Manuals.
 - 4. Warranties.
 - 5. Project Contact Directory.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - e. Remove debris and surface dust from limited access spaces.
 - f. Sweep concrete floors broom clean in unoccupied spaces.
 - g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - h. Clean transparent materials, including and in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish glass, taking care not to scratch surfaces.
 - i. Remove labels that are not permanent.
 - j. Leave Project clean and ready for occupancy.
- C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION 017700

DIVISION 01 – GENERAL REQUIREMENTS
SECTION 017839
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for final property survey.
 - 2. Section 017700 "Closeout Procedures" for general closeout procedures.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up record prints.
 - 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one of file prints.
 - 3) Submit record digital data files and one set of plots.
 - 4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit three paper-copy sets of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and three sets of prints.
 - 3) Print each drawing, whether or not changes and additional information were recorded.

- B. Record Specifications: Submit one paper copy and PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy and PDF electronic files and directories of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated PDF electronic file with comment function enabled.
 - 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as scanned PDF electronic file(s) of marked-up paper copy of Specifications.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file and paper copy.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

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

END OF SECTION 017839

DIVISION 08 – OPENINGS
SECTION 061000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Materials:
 - 1. Wood blocking and nailers.
 - 2. Wood treatment.
- B. Related Requirements:
 - 1. Section 085113 "Aluminum Storefront Windows"

1.3 ACTION SUBMITTALS

- A. Product Data: Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
- B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- C. Evaluation Reports: For Wood-preservative-treated wood, from ICC-ES:

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.
- C. Lumber: Worked and graded in accordance with American Lumber Standard PS 20 (U.S. Dep. Comm.), S4S, seasoned to moisture content not exceeding 19% and stamped "S-DRY."
 - 1. Headers, Rough Frames, Nailers, and Blocking, etc.: #1 Common Southern Yellow Pine, or equivalent SPF, or Douglas Fir.

2.2 WOOD BLOCKING AND NAILERS

- A. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- B. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work

2.3 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is pressure-preservative treated provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.4 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWPAC U1; Use Category UC2 for interior construction. Use Category UC3b for exterior construction.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Nailers and Blocking: Execute in a manner to achieve greatest stability.
 - 1. General: Use 2x4 wood studs spaced 16" o.c. except as indicated otherwise. Extend partition studs to the structure above.
 - 2. Plates: Provide single bottom plate and double top plates of matching 2x material; except single top plate may be used for non-load bearing partitions. Joints in top plates shall be lapped at least 6"; do not join over wall openings.

3. Anchorage at Exterior Walls: Anchor the bottom plate with foundation bolts over sill sealer.
4. Corners and Intersections: Construct with not less than 3 studs; or use “The Nailer” screw tabs to eliminate the stud traditionally provided only to back the edge of the drywall. Provide screw tabs 12" o.c. along each edge of drywall.
5. Control Joints: Provide double studs at all gypsum board control joint locations. Place as indicated and so that no expanse of wall exceeds 30 feet, consistent with lines of building spaces, as approved by Architect.
6. Nailers and Blocking Within Walls:
 - a. Provide wherever shown and where required for attachment of work of other trades. Cut and fit as required for true line and level of work to be attached.

3.2 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label

END OF SECTION 061000

SECTION 079200
JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes joint sealants for interior and exterior applications:
- B. Related Requirements:
 - 1. Section 084113 "Aluminum Framed Entrance" for perimeter sealing of aluminum entrance framing to exterior walls
 - 2. Section 085113 "Aluminum Storefront Windows" for perimeter sealing of aluminum windows to exterior walls

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish watertight and airtight continuous seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each type of joint sealant product.
- B. Samples: For each kind and color of joint sealant required.
- C. Joint Sealant Schedule: Include the following information:
 - 1. Joint sealant application, joint location and designation.
 - 2. Joint sealant manufacture and product line.
 - 3. Joint sealant formulation.
 - 4. Joint sealant color.
- D. Product Test Reports.
- E. Preconstruction compatibility and adhesive test reports.

- F. Preconstruction field adhesion test reports.
- G. Field adhesion test reports.
- H. Warranties.

1.5 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MAUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of, the products listed herein.

2.2 JOINT SEALANTS

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated in accordance with 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 - 1. Architectural sealants shall have a VOC content of 250 g/L or less.
 - 2. Sealants and sealant primers for nonporous substrates shall have a VOC content of 250 g/L or less.
 - 3. Sealants and sealant primers for porous substrates shall have a VOC content of 775 g/L or less.
- C. Liquid Applied Sealants: Sealants and sealant primers shall comply with ASTM C 920 and other requirements for each liquid applied joint sealant specified including those referencing ASTM C 920 classifications for type, grade, class and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids: Where sealants are indicated of Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing in accordance with ASTM C 1247. Liquid used for testing is deionized water unless otherwise indicated.
- D. Stain Test Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing in accordance with ASTM C 1248 and have not stained porous joint substrates indicated for the project.
- E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with CFR 177.2600.
- F. Colors of Exposed Joint Sealants: Match clear anodized aluminum color.

2.3 SEALANT TYPES

- A. Sealant: Low-modulus, single component, polyurethane hybrid sealant. Aluminum color to match the window frame color. Provide the following:
 1. Tremco "Dymonic FC" is the Basis-of-Design or Owner Approved Equal during the Bidding Phase by Sonneborn or Dow.

2.4 JOINT FILLER

- A. Joint Filler: Backer rod for elastomeric sealants. Extruded closed cell polyethylene foam or polyethylene jacketed polyurethane foam, non-bleeding, non-staining, oversized 30 to 50 percent; provide one of the following:
 1. Dow: Ethafoam.
 2. Meadows: backer Rod.
 3. Sonneborn: Sonofoam backer Rod.

2.5 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Non-staining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas and capable of remaining resilient at temperatures down to minimum 26 deg. F (minimum 32 deg. C). Provide product with low compression set of size and shape to provide a secondary seal, to control sealant depth and otherwise contribute to optimum sealant performance.

- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

DIVISION 08 – OPENINGS
SECTION 084113
ALUMINUM FRAMED ENTRANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

1. Aluminum entrance doors and frames.
2. Seals around frame perimeters.
3. Weatherstripping.
4. Installation of hardware furnished for aluminum entrances by hardware supplier as specified in Section 087100 - Finish Hardware.
5. Perimeter sealant installation in accordance with requirements of Section 079200 - Joint Sealants.

- B. Related Requirements:

1. Section 079200 "Joint Sealants" for sealing at aluminum door frames
2. Section 087100 "Finish Hardware" for new aluminum doors and frames finish hardware.
3. Section 088000 "Glazing" for new glass.

1.3 QUALITY ASSURANCE

- A. Installer's Qualifications: Company specializing in installation of systems of the type specified for 5 years, and approved by system manufacturer.
- B. Fabrication Tolerances: Fabricate aluminum storefront in accordance with framing manufacturer's prescribed tolerances.
- C. Thermal Break Components: Manufactured to meet the following standards:
1. AAMA QAG 1–98, “Quality Assurance Processing Guide for Poured and Debridged Polyurethane Thermal Barriers.”
 2. AAMA TIR A8–90, “Structural Performance of Poured and Debridged Framing Systems.”
 3. AAMA 505-98, “Dry Shrinkage and Composite Performance Thermal Cycling Test Procedure.”

D. Coordination:

1. Installer of aluminum entrance doors and frames shall be responsible for installing each complete with glass and perimeter sealant.
2. Coordinate with Finish Hardware Supplier as required to assure proper fitting of hardware items furnished under Section 087100.
 - a. Hardware Installation: According to templates approved by hardware item manufacturers.
 - b. Hardware Templates: Report to Architect in writing should templates not be delivered by Hardware Supplier in sufficient time to meet construction schedules.
3. Glazing: Installer of aluminum entrance doors shall be responsible for installing them complete with glass.

1.4 SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, and finishes.
- B. Shop Drawings: Show elevations and details, including gaskets, weatherstripping, methods of anchoring, type of alloy, finishes; size and thickness of individual parts, dissimilar metal protection.
 1. Shop drawings for the window systems shall bear the seal and signature of a Structural Engineer licensed in the State of Illinois and contain:
 - a. Anchor locations - If anchors other than thru-jamb type are used, contractor to provide required interior trim as required to conceal fasteners whether shown on the drawings or not.
 - b. Structural integrity.
 - c. Wind loading.
 - d. Structural loading.
 - e. All installations shall be based on the 2015 IBC.
- C. Samples: Submit for Architect's review:
 1. 2 samples 6" long of each color available for each type of glazing sealant and gasket exposed to view.
 2. Full size samples of each framing system.
- D. Certificates: Submit manufacturer's certification that Installer is approved by manufacturer.

1.5 PRODUCT STORAGE, AND HANDLING

- A. Uncrate doors, frames and related accessories and store in strict compliance with the manufacturer's instructions. Remove all padding and packing in contact with aluminum immediately upon arrival in order to prevent staining.

1.6 WARRANTIES

- A. Manufacturer shall agree to repair or replace units whose components fail due to inferior materials or workmanship within 10 years of installation. Failures shall include but are not be limited to:
 - 1. Structural failures including excessive deflection, leakage or air infiltration.
 - 2. Failure of insulating glass, including interpane dusting or misting and internal dew point rising above -50°F.
- B. Warranty Period:
 - 1. Manufacturer: 10 years from date of Substantial Completion.
 - 2. Installer: 5 years from date of Substantial Completion
 - 3. Finish: Manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER AND TYPE

- A. Acceptable Products:
 - 1. Aluminum Door Frame: TriFab "VG 451T" as manufactured by Kawneer as the Basis-of-Design or comparable products by Efco, Tubelite, Manko or YKK AP or Owner Approved Equal.
 - a. Frames shall have with a nominal profile of 2" x 4 1/2".
 - 2. Non-Thermally Broke Aluminum Entrance Doors: Doors shall be heavy duty swing type, "Tuffline 500" (2" deep) as manufactured by Kawneer as the Basis-of-Design or comparable products by Efco, Tubelite, Manko or YKK AP.
 - a. Door thickness of 2".
 - b. Hardware and Lock Cylinders: As furnished under Section 087100 – Finish Hardware

2.2 MATERIALS AND CONSTRUCTION

- A. Aluminum (Framing and Components):
 - 1. Material Standard: ASTM B 221; 6063-T6 alloy and temper.
 - 2. Wall Thickness: minimum wall thickness of 3/16."
 - 3. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
 - 4. Thermal Breaks: Manufacturer's standard type. Poured-in-place polyurethane type shall have maximum tensile strength of 4,300 psi.

B. Accessories:

1. Fasteners: Where exposed, shall be Stainless Steel.
2. Gaskets: Glazing gaskets shall be extruded EPDM rubber.
3. Perimeter Anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
4. Dissimilar Metal Protection: Alkali resistant bituminous paint conforming to AN-P 31, plastic separators, insulating tapes or manufacturer's standard, subject to Architect's approval.

C. Weatherstripping: Thermoplastic elastomer weatherstrip system on all sides of exterior doors and/or frames, meeting AAMA 702 requirements. Provide surface applied bottom weatherstrip with flexible blade gasket at bottoms of doors.

D. Internal Joint Sealant: Polyisobutylene non-hardening thin-joint sealant "Presstite #579" or equal.

E. Sealants: See Section 079200 - Joint Sealants.

F. Glass: See Section 088000 - Glazing.

G. Material Separation: Provide a coating or material between dissimilar materials as recommended by aluminum door manufacturer to protect against corrosion of aluminum materials.

2.3 FABRICATIONS

- A. Fabricate components per manufacturer's installation instructions and with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.
- B. Accurately fit and secure joints and corners. Make joints flush, hairline and weatherproof.
- C. Prepare components to receive anchor devices. Fabricate anchors.
- D. Arrange fasteners and attachments to conceal from view.

2.4 FINISH

- A. Exposed Metal Surfaces: Natural Anodized Finish, AA-C22A41, Class 1 (min. 0.7 mils thickness and sealed), clear natural aluminum color.
- B. Unexposed metal surfaces may remain uncoated.

2.5 FABRICATION

- A. General: Fabricate and assemble in as large sections in shop as consistent with shipping and field requirements.

- B. Joints: Shall be flush, hairline. Field splices and joints between sections shall produce strength to resist misalignment and deformations imposed by handling and live loads. Keep fasteners concealed.
- C. Doors: Corners: Dual moment construction consisting of mechanical fastening using extruded aluminum channel clips and bolt fasteners and SIGMA deep penetration plug welds and fillet welds.
- D. Reinforce doors and frames for hardware with backing plates of non-magnetic steel or hot-dip galvanized steel complying with ASTM A 36.
 - 1. Reinforce for butt hinges with 1/4" steel plates 10" long welded to aluminum with 6 welds, each 1/2" long.
 - 2. Reinforce for closers with 10-gauge plate, 12-gauge plate for other hardware.
 - 3. Reinforce for all other cutouts and mortises similarly.
- E. Provide positive means to drain to the outside any water entering the system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted hardware.
- C. All surfaces that may contact steel, concrete or masonry construction shall be prepared with dissimilar protection materials hereinbefore specified. Aluminum surfaces to remain exposed shall be protected from bituminous paint application.

3.3 INSTALLATION

- A. Set frames in locations shown, level, plumb and in line. Seal joints between framing members and mullions. Where moldings are jointed, accurately cut and fit members to result in tightly closed joints.
- B. Do not use exposed fasteners except as approved by Architect.
- C. Internal Drainage: Cut, join and seal members to form positive paths of drainage within the framing in order to prevent any water that may enter the system from leaking through to interior of building.

- D. Frame Anchors: Unless indicated or approved otherwise, space anchors all around opening at not more than 24" o.c. Powder-actuated fasteners will not be allowed.
- E. Glazing Application:
 - 1. Front plane.
 - 2. Outside glazed.
- F. Glazing Beads: Make corners square, butted and tightly fit.
- G. Glazing Seals: Furnish seals to glass installer, ready for installation of glazing.
- H. Apply sealant to both sides of perimeter of frames, using materials and methods specified in Section 079200 - Joint Sealants, including submissions.
- I. Install Material Separation: Provide a coating or material between dissimilar materials as recommended by aluminum door system's manufacturer to protect against corrosion of aluminum materials.
- J. Contractor is allowed to install head receptors. No jamb receptors will be allowed.
- K. Finish Hardware: Install finish hardware as specified in Section 087100.

3.4 ADJUSTING, CLEANING AND PROTECTION

- A. Hardware Adjustment: Adjust and check each operating item, to ensure proper operation and function.
- B. Hardware Lubrication: Lubricate moving parts with lubricant recommended by manufacturer. Use graphite-type lubricant if none other recommended.
- C. Hardware Replacement: Replace units that cannot be adjusted and lubricated to operate freely and smoothly as intended.
- D. Cleaning: Clean aluminum surfaces promptly after installation of frames and doors, exercising care to clean corners and to avoid damage of the protective coating (if any). Remove excess glazing and sealant compounds, dirt and other substances. Final cleaning will be done by General Contractor just prior to time of acceptance.
- E. Touch-Up: Scratches and abrasions shall be touched-up with finish manufacturer's recommended coating, to satisfaction of Architect.
- F. Protection:
 - 1. General Contractor shall provide protective measures and other precautions as required through remainder of construction period, according to recommendations of Installer, to ensure that doors and frames will be without damage or deterioration (other than normal weathering) at time of acceptance.
 - 2. Plastic films applied for protection during shipment shall not be used for protection after installation of aluminum.

END OF SECTION 084113

DIVISION 08 – OPENINGS
SECTION 085113
ALUMINUM STOREFRONT WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:

- 1. Fixed aluminum storefront windows.
- 2. Operable windows installed in storefront windows.
- 3. Mock Up Installation and Testing.

- B. Related Requirements:

- 1. Section 079200 "Joint Sealants" for perimeter sealing of aluminum windows to exterior walls.
- 2. Section 088000 "Glazing" for glass and metal panels.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Washington Academy.

- 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- 2. Review, discuss, and coordinate the interrelationship of aluminum windows with other exterior wall components. Include provisions for anchorage, flashing, sealing perimeters, and protecting finishes.
- 3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
- 4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.

- B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
1. Submit shop drawings by date shown on drawings.
 - a. Shop drawings must be prepared wholly by the window manufacturer, or a qualified engineering services firm under the direction of the manufacturer.
 - b. After mockups are field tested and approved, window manufacturer shall complete the shop drawings for the remaining windows.
 2. Shop drawings for the window systems shall bear the seal and signature of a Structural Engineer licensed in the State of Illinois and contain:
 - a. Anchor locations - If anchors other than thru-jamb type are used, contractor to provide required interior trim as required to conceal fasteners whether shown on the drawings or not.
 - b. Structural integrity.
 - c. Wind loading.
 - d. Structural loading.
 - e. All window installations shall be based on the 2015 IBC.
- C. Samples: For each exposed product and for each color specified, 2 by 4 inches (50 by 100 mm) in size.
- D. Samples for Initial Selection: For units with factory-applied color finishes.
1. Include similar Samples of hardware and accessories involving color selection.
- E. Samples for Verification: For aluminum windows and components required, showing full range of color variations for finishes, and prepared on Samples of size indicated below:
1. Exposed Finishes: 2 by 4 inches (50 by 100 mm).
 2. Exposed Hardware: Full-size units.
- F. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency.
- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports, and calculations.
- B. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project, who has a minimum of 5 years experience in similar window installation projects.
- C. Mockups: Erect one mockup in location shown on the drawings to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. This mockup will be field tested for air infiltration and water resistance in accord with paragraph 3.3.
 - 1. Install the mockup window at the one wall opening location as shown on Drawings.
 - 2. Test mockups per par. 3.3 Field Quality Control per schedule on drawings.
 - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
 - c. Faulty operation of movable sash and hardware.
 - d. Deterioration of materials and finishes beyond normal weathering.
 - 2. Warranty Period:
 - a. Window Manufacturer: 10 years from date of Substantial Completion.
 - b. Window Installer: 5 years from date of Substantial Completion.
 - c. Finish: 20 year Manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Products:
 - 1. Basis-of-Design is Kawneer Window System or comparable products by Efco, Tubelite, Manko or YKK AP or Owner Approved Equal:
 - a. Fixed: 451 TVG, 2" x 4 ½".
 - b. Projected: 8225 TL, 2 ¼" depth.

- B. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

2.2 MATERIALS

- A. All aluminum members, frames, sash bars, glazing beads, muntins and mullions shall be extruded from 6063T alloy of suitable temper and have a minimum tensile strength of 28,000 psi.
 - 1. No main member shall have a wall thickness less than .070"
 - 2. Aluminum glazing beads shall be snap-in type with a minimum wall thickness of .050".
 - 3. Sills/subsills shall have a minimum wall thickness of .090".
- B. Aluminum Glazing Beads: Extruded snap-in type with glazing legs no less than 3/4".
- C. Thermal Barrier: Poured in place polyurethane with max. tensile strength of 4300 psi.
 - 1. Thermally Improved Construction: Fabricate frames, sashes, and muntins with an integral, concealed, low-conductance thermal barrier located between exterior materials and window members exposed on interior side in a manner that eliminates direct metal-to-metal contact.
- D. Weatherstripping: Two rows of jacketed foam or neoprene fin gaskets or polypropylene pile installed in dovetailed grooves extruded in sash members and secured to prevent movement, shrinkage or loss. Jacketed type shall conform to AAMA 701.2.
- E. Glazing Seals: As furnished by window manufacturer; color as selected by Architect from manufacturer's standard color options. Any of the following types may be used:
 - 1. Extruded EPDM dry gasket seals with impervious skins.
 - 2. Extruded vinyl dry gasket seals with impervious skins, meeting ASTM D 2287.
 - 3. Extruded neoprene dry gasket seals with impervious skins, meeting ASTM D 2000, type 2BC415 to 3BC415.
 - 4. Extruded silicone dry gasket seals with impervious skins.
 - 5. Expanded neoprene gaskets with impervious skins meeting ASTM C 509, Grade 4.
 - 6. Butyl tape and silicone wet seals as standard to window manufacturer.
- F. Anchors: Aluminum or steel. When anchors are steel they must be primed with shop coat of approved zinc chromate primer and insulated from the aluminum members or must be cadmium or zinc plated to meet ASTM A 165 or A 164 requirements.
- G. Fasteners:
 - 1. Frame Assembly Fasteners: Non-magnetic stainless steel.
 - 2. Miscellaneous Fasteners: Aluminum or non-magnetic stainless steel, with finish color to match frames where exposed to view.
 - 3. Frame Anchor Clip Fasteners: Expansion bolts, toggle bolts or lag screws, as required by building construction material, not less than 1/4" dia., cadmium or zinc plated steel in accordance with ASTM A 164 and A 165.
 - 4. No plastic expansion anchors allowed.

H. Sills/Subsills:

1. Extruded aluminum sections shall assure that any water entering the glazing channels will be positively weeped to the exterior. Furnish sills with sub-structural components, such as legs and/or blocking, so as to assure complete support of the sill across the window opening.
2. Subsills: Thermally broken, extruded-aluminum subsills in configurations indicated on Drawings.

I. Receptors: Head receptors are allowed. Jamb receptors are not allowed.

J. Dissimilar Metal Protection: Alkali resistant bituminous paint conforming to AN-P 31, plastic separators, insulating tapes or manufacturer's standard, subject to Architect's approval.

2.3 COMPONENTS

A. Hardware:

1. All steel components including attachment fasteners to be stainless steel except as otherwise noted.
2. Extruded aluminum components 6063-T5 or T6.
3. Locking handles, bases and strikes to be die cast, white bronze or stainless steel.
4. Thermo-plastic or thermo-set plastic caps, housings and other components to be injection-molded nylon, extruded PVC or other suitable compound.

B. Sealants:

1. All sealants shall comply with applicable provisions of AAMA 800 and/or Federal Specifications FS-TT-001 and 002 Series.
2. Frame joinery sealants shall be suitable for application specified and as tested and approved by window manufacturer.

2.4 WINDOW PERFORMANCE REQUIREMENTS

A. Design Wind Loads:

1. The design wind pressure for the project shall be per the IBC 2015 code and should be determined by the Structural Engineer licensed in the State of Illinois obtained by the manufacturer.
2. All structural components, including meeting rails, mullions, anchors and added reinforcing shall be designed accordingly, by a Structural Engineer licensed in the State of Illinois, complying with deflection and stress requirements as listed herein.

B. Air Test: Air infiltration maximum 0.1 cfm per square foot at 6.24 psf pressure differential when tested in accord with ASTM E283.

C. Water Test: No uncontrolled water leakage at 12.00 psf static pressure differential, with Water application rate of 5 gallons/hr/sq ft when tested in accord with SASTM E331 and ASTM E547.

2.5 GLAZING

- A. See Specification Section 088000 "Glazing".

2.6 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.
- B. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range of colors.
- C. Projected Window Hardware:
 - 1. Gear-Type Rotary Operators: Complying with AAMA 901 when tested according to ASTM E 405, Method A.
 - a. Type and Style: As selected by Architect from manufacturer's full range of types and styles.
 - b. All operable windows shall have a rotary operator.
 - 2. Hinges: Stainless steel 4 – bar non-friction type, not less than two per sash.
 - 3. Lock: Lever handle and cam-action lock with keeper.
 - 4. Limit Devices: Concealed support arms with adjustable, limited, hold-open limit devices designed to restrict sash opening.
 - a. Allow windows to be opened as far as possible.
- D. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.
- E. Fasteners: Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.
 - 1. Exposed Fasteners and Anchors: Do not use exposed fasteners or anchors to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.
 - 2. Exposed fasteners or anchors shall be covered by trim which matches the finish and colors of the window frame.

2.7 INSECT SCREENS

- A. General: Fabricate insect screens to integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.
 - 1. Provide screen anchors at 6 locations typical. Two on each side and two at the bottom.

- B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

- 1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet with color to match window frames.

- C. Aluminum Wire Fabric: 18-by-16 (1.1-by-1.3-mm) mesh of 0.011-inch- (0.28-mm-) diameter, coated aluminum wire, Charcoal gray finish

2.8 FABRICATION

- A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
- B. Weather strip each operable sash to provide weathertight installation.
- C. Weep Holes: Provide weep holes and internal passages to conduct infiltrating water to exterior.

2.9 ALUMINUM FINISHES

- A. Finish: Clear Anodized Aluminum Class I.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.

- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- E. Glazing Application:
 - 1. Front plane.
 - 2. Outside glazed except where otherwise noted on drawings.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency:
 - 1. The Window Contractor will engage and pay a qualified testing agency to perform tests and inspections. The testing company needs to be approved by the Owner.
 - 2. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.
- B. Testing Services: Testing and inspecting of installed windows shall take place as follows:
 - 1. Testing Methodology: Testing of windows for air infiltration and water resistance shall be performed according to AAMA 502.
 - 2. Air-Infiltration Testing:
 - a. Test Pressure: That required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance class indicated.
 - b. Allowable Air-Leakage Rate: 1.5 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for product type and performance class rounded down to one decimal place.
 - 3. Water-Resistance Testing:
 - a. Test Pressure: Eight (8) lbs/psf to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance grade indicated.
 - b. Allowable Water Infiltration: No water penetration.
 - 4. Testing Extent: One window at each school in location as shown on the drawings. Window shall be tested after perimeter sealants have cured.
 - 5. Test Reports: Prepared according to AAMA 502.
- C. Remove and replace noncomplying windows and retest as specified above.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- E. Prepare test and inspection reports.

- F. Owner may have other random windows tested after they are completed in order to verify compliance with the above air and water resistant testing. These extra costs from a testing company will be paid for by the Owner. Any windows that fail the tests will need to be corrected and retested at the Contractors expense.

3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weathertight closure.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085113

DIVISION 08 – OPENINGS
SECTION 087100
FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. SUMMARY

1. Mechanical door hardware for exterior swinging doors.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Other Action Submittals:

1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
- a. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
- b. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
- c. Content: Include the following information:
- 1) Identification number, location, hand, size, and material of each door and frame.
 - 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.

- 4) Fastenings and other pertinent information.
 - 5) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 6) Mounting locations for door hardware.
 - 7) List of related door devices specified in other Sections for each door and frame.
2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents. Coordinate all keying with the Owner.

1.3 INFORMATIONAL SUBMITTALS

- A. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
1. Warehousing Facilities: In Project's vicinity.
 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Source Limitations: Obtain each type of door hardware from a single manufacturer.
- C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- D. Accessibility Requirements: Comply with applicable provisions in the DOJ's 2010 ADA Standards for Accessible Design and ICC A117.1.
1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 2. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 3. Closers: Adjust door and gate closer sweep periods so that, from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.6 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- C. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Two years from date of Substantial Completion, unless otherwise indicated.
 - a. Exit Devices: Five years from date of Substantial Completion.
 - b. Manual Closers: 10 years from date of Substantial Completion.
 - c. Hinges: Life of Building from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section as follows:

1. Continuous Hinges: As specified.
2. Panic Hardware: Sargent, No substitutions.
3. Locks/Cylinders: Sargent, No substitutions.
4. Electric Strikes: HES, No substitutions.
5. Closers: Norton, No substitutions.
6. All Other Hardware: As specified or Owner approved equal.

2.2 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except as otherwise approved by Architect.
 1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 2. Spacers or Sex Bolts: For through bolting of hollow-metal doors and wood doors.
 3. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.3 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install type quantities indicated in door hardware schedule.
- D. Thresholds: Set threshold in full bed of sealant.
- E. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- F. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.
- G. Closers: Sex-bolt all closers on wood doors.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted

to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DOOR HARDWARE SCHEDULE

Hardware Group No. 01

MC101		MC102	MC103	MC104	MC105		
QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR	
1	EA	CONTINUOUS HINGE	CFM83SLFHD3		628	PEM	
1	EA	RIM EXIT DEVICE	8810		626	SAR	
1	EA	90 DEGREE OFFSET PULL	8190EZHD 10" STD		630-	IVE	
					316		
1	EA	OH STOP	100S		630	GLY	
1	EA	CLOSER	PR7500		689	NOR	
1	EA	BLADE STOP SPACER	AS REQUIRED		689	NOR	
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER				
1	EA	DOOR SWEEP	39A		A	ZER	
1	EA	THRESHOLD	625A-223		A	ZER	

Hardware Group No. 02

MC108 MC109

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	RIM EXIT DEVICE	8810	626	SAR
1	EA	90 DEGREE OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	CLOSER	PR7500	689	NOR
1	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER
1		DOOR ALERT SYSTEM	REINSTALL SALVAGED		EXI

REINSTALL SALVAGED DOOR ALERT SYSTEM.

Hardware Group No. 03

MC116

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	ELECTRIC STRIKE	9400	630	HES
1	EA	RIM EXIT DEVICE	LD 8810	626	SAR
1	EA	90 DEG OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	CLOSER	PR7500	689	NOR
1	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER
1	EA	REMOTE UNLOCKING SYSTEM	REINSTALL SALVAGED AIPHONE SYSTEM		

REINSTALL SALVAGED AIPHONE SYSTEM.

AIPHONE SYSTEM IS TO RELEASE ELECTRIC STRIKE ALLOWING MANUAL INGRESS. FREE
EGRESS ALWAYS AVAILABLE.

Hardware Group No. 04

MC107 MC110 MC111 *MC115 (SEE
NOTE BELOW)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	REMOVABLE MULLION	980	689	SAR
2	EA	RIM EXIT DEVICE	8810	626	SAR
2	EA	90 DEG OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	CLOSER	PR7500	689	NOR
2	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
2	EA	ASTRAGAL	8193AA	AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER

*FOR DOOR MC115 ONLY, PROVIDE LOCKABLE REMOVABLE MULLION (L980 X 689 x SAR)

Hardware Group No. 05

MC106 MC113

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	ELECTRIC STRIKE	9400	630	HES
1	EA	ELECTRIFIED REMOVABLE MULLION	EL980	689	SAR
2	EA	RIM EXIT DEVICE	8810	626	SAR
1	EA	MORTISE CYLINDER	AS REQUIRED X MKD FOR KEYED REMOVABLE MULLION	626	SAR
2	EA	90 DEG OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	CLOSER	PR7500	689	NOR
2	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
2	EA	ASTRAGAL	8193AA	AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER
1		CARD READER	REINSTALL SALVAGED		EXI

REINSTALL SALVAGED CARD READER.

CREDENTIAL READER IS TO RELEASE ELECTRIC STRIKE ALLOWING MANUAL INGRESS.
FREE EGRESS ALWAYS AVAILABLE.

Hardware Group No. 06

MC112

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	REMOVABLE MULLION	980	689	SAR
2	EA	RIM EXIT DEVICE	8810	626	SAR
2	EA	90 DEG OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	CLOSER	PR7500	689	NOR
2	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
2	EA	ASTRAGAL	8193AA	AA	ZER
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
2	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER

Hardware Group No. 07

MC114

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONTINUOUS HINGE	CFM83SLFHD3	628	PEM
1	EA	RIM EXIT DEVICE	8810	626	SAR
1	EA	90 DEG OFFSET PULL	8190EZHD 10" STD	630- 316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	CLOSER	PR7500	689	NOR
1	EA	BLADE STOP SPACER	AS REQUIRED	689	NOR
1	EA	GASKETING	BY DOOR/FRAME MANUFACTURER		
1	EA	DOOR SWEEP	39A	A	ZER
1	EA	THRESHOLD	625A-223	A	ZER

END OF SECTION 087100

SECTION 088000
GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes:
 - 1. Glazing of exterior aluminum storefront windows, entrance framing and doors.
- B. Related Requirements:
 - 1. Section 085113 "Aluminum Storefront Windows" for glazing of new aluminum windows.

1.3 QUALITY ASSURANCE

- A. Comply with all pertinent codes and regulations, including the Consumer Product Safety Commission Safety Standard for Architectural Glazing Materials (16 CFR 1201) and the State of Illinois Safety Glazing Materials Act.
- B. Comply with all pertinent recommendations in the Glazing Manual of the Flat Glass Marketing Association.
- C. All glass shall bear glass manufacturer's label stating variety and grade.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturers' product data describing each type of glass and glazing item specified herein.
- B. Samples: Submit for Architect's review 2 samples, 6" square, of each type of glass required.
- C. Manufacturer's Instructions: Submit glazing gasket manufacturer's recommendations for each installation situation.

1.5 WARRANTIES

- A. Installer shall guarantee installed work to be waterproof for a period of 5 years.

- B. Insulating glass units shall be warranted for 10 years against failure, including interpane dusting or misting and internal dew point rising above -50°F. Warranty shall provide for replacement of glass and glazing, including labor.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver glazing materials to job site in sealed containers with manufacturer's original labels attached to each piece of glass. Provide UL labels for fire rated glass. Provide cushions at edges to prevent impact damage.
- B. Store glass on edge, under cover and protect from staining.
- C. Avoid deformation of units. Protect faces from scratches and abrasion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

- A. Insulating-Glass Units: ASTM E 2190, certified through IGCC as complying with requirements of IGCC. PPG is the basis-of design manufacturer or Owner approved equal products of Guardian and Pilkington during the bidding phase. Glass types shall be as follows:
 - 1. GL-1: PPG 1" Insulated Solarban R100-Tempered:
 - a. 1/4" tempered on clear neutral reflective Low-E #2 surface.
 - b. 1/2" airspace with argon.
 - c. 1/4" clear tempered.
 - 2. GL-2: Insulated Metal Spandrel Infill Panels: 1" thick insulated sandwich panels consisting of an isocyanurate core laminated to 1/8" tempered hardboard substrates with smooth aluminum skins.
 - a. "R" Value of Core: At least 6.
 - b. Finish: On both sides of panels shall be smooth aluminum with a Kynar 500 finish in a custom color selected by Architect. Color maybe different on the interior and exterior.
 - c. Lamination: With thermo-plastic, moisture and fungus resistant adhesive, subjected to direct heat before assembly closure in order to drive off excess solvents.
 - d. Acceptable Manufacturer: Mapes Industries, Citadel Architectural Products or Owner approved equal.
 - 3. GL-3: 1" Insulated Laminated Safety Glass - No substitutions:
 - a. 1/4" tempered on clear neutral reflective Low-E #2 surface.
 - b. 1/2" airspace with argon.
 - c. 1/4" laminate - 1/8" clear - 030 Clear PVB - 1/8" clear

2.2 Glazing Materials:

- A. Approved Manufacturers: Use products of the following:

1. Tremco Manufacturing Co.
 2. G.E.
 3. Dap, Inc.
 4. Pecora Corp.
 5. Protective Treatments, Inc. (PTI).
 6. Vetrotech (Saint-Gobain).
- B. Setting Blocks: Neoprene, 70-90 durometer hardness, having proven compatibility with sealants used, width of rabbet less 1/16" by lengths sufficient for weight of glass supported.
- C. Spacers: Neoprene, 40-50 durometer hardness, having proven compatibility with sealants used.
- D. Compressible Filler Rod: Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, proven to be compatible with sealants used, flexible and resilient, with 5-10 psi compression strength for 25% deflection.
- E. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean the glazing channel, or other framing members to receive glass, immediately before glazing. Remove coatings that are not firmly bonded to the substrate. Remove lacquer from metal surfaces wherever elastomeric sealants are used. Verify that weep holes are free of obstructions.
- B. Apply primer or sealer to joint surfaces wherever recommended by sealant manufacturer.
- C. Cut glass with smooth straight edges to full sizes required by openings. Do not attempt to cut, seam, nip or abrade glass that is tempered, heat strengthened, or coated.

3.3 INSTALLATION

- A. Glass:
1. Set glass on setting blocks at quarter points, and fix without springing or inducing bowing. Install with proper bite and clearances all around.
 2. Glass having waviness shall be set with waves placed horizontally unless Architect directs otherwise. Lites viewed in series or as a group shall have uniform draw, bow and similar characteristics.

3. Tempered glass having tong marks shall be installed so that tong marks are within rabbets at top of opening.

3.4 CLEANING

- A. All glass shall be left whole, free from checks or other defects, and cleanly washed inside and out and the building left ready for occupancy when directed by the Architect.
- B. Any defective glass that may appear after cleaning shall be removed and replaced with perfect glass.

END OF SECTION 088000

SECTION 099113
PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. See below for painting requirements.
 - 1. Painting Work: Paint existing steel lintels of window openings as noted on drawings.

1.3 SUBMITTALS

- A. Product Data: Submit for Architect's review on all products to be used. List each material and cross-reference it to the specified paint and finish system and application. Identify by manufacturer's catalog number and general classification.
- B. Color Samples: When so requested, submit samples of each finish and topcoat color for Architect's review. Also, submit samples on portions of work at the site as directed by Architect, not less than 4ft x 4ft size.
 - 1. Samples of Non-Transparent Finishes: If requested, submit for Architect's review 3 panels of non-transparent finishes, not less than 8" x 8" for each finish and color required, using proposed paint on materials resembling surfaces to be painted.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Maintenance Supply: Deliver to Owner in unused containers 1 gallon of each type and color of paint used on the Project. Mark each container with color and room names/numbers where paint was used, without obscuring manufacturer's label. Deliver these containers to place on site designated by Owner.

1.5 QUALITY ASSURANCE

- A. Comply with State of Illinois Regulations (effective date July 1, 2009) regarding VOC (Volatile Organic Compounds).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Approved Manufacturers: Paint materials shall be manufactured by Pratt & Lambert, I.C.I. Glidden, Pittsburgh Paints (PPG), Sherwin-Williams, Benjamin Moore, Zinsser or other manufacturer's as approved by Architect.
- B. Approved Products: Manufacturer's products listed hereinafter in the Painting Schedule represent types and grades required. Comparable products of other manufacturers listed in preceding paragraph will also be acceptable.
- C. Grades: Materials not displaying manufacturer's identification as a best-grade product will not be acceptable.
- D. Thinners: Paint manufacturer's preferred solvent.
- E. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Conditions: Applicator must examine areas and conditions under which painting work is to be done and shall notify Contractor in writing of conditions detrimental to proper and timely completion of work.
- B. Moisture Contents: Do not apply coatings to surfaces where electronic moisture meter indicates values above 12%, except that for wood, moisture content may be not exceed 15%.

- C. Proceed with coating application only after unsatisfactory conditions have been corrected.

- 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- C. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.
- D. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 REPAINTING EXISTING PAINTED SURFACES

- A. Surface Preparation:
 - 1. Do not paint existing surfaces until any items attached to existing surfaces and not scheduled for painting have been removed. (The trade removing the attachments shall replace them to their original positions after painting is complete.).
 - 2. Wash surfaces to be repainted.
 - 3. Remove all loose, blistered, cracked or otherwise defective paint and varnish. Sand surfaces smooth, free of depressions. Cut out and fill cracks or other defects to match adjoining surfaces.

3.4 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint entire exposed surface of existing window lintels.

- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.5 FIELD QUALITY CONTROL

- A. Architect's Inspection: All work where a coat of material has been applied must be inspected and approved by Architect before application of succeeding specified coat; otherwise no credit for the coat applied will be given and the work in question shall be recoated.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.6 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 PAINTING SCHEDULE

- A. Existing Window Lintels.
 - 2 coats - P & L Pro-Hide Gold Ext. Latex Semi-Gloss Paint,
S-W Metalatex Acrylic Semi-Gloss, B42 Series
ICI 2406 Dulux Professional Semi-Gloss Finish, or
Benjamin Moore Super Spec HP® D.T.M. Acrylic Low Lustre P25 or
PPG SpeedHide Exterior House & Trim Semi-Gloss, Acrylic Latex, 6-900 Series

END OF SECTION 099113

DIVISION 12 – FURNISHINGS
SECTION 122413
ROLLER WINDOW SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Manually operated sunscreen roller shades.
- B. Related Requirements:
 - 1. Section 061000 "Miscellaneous Rough Carpentry" for wood blocking and grounds for mounting roller shades and accessories.

1.3 REFERENCES

- A. ASTM G31 – Standard practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. NFPA 70 - National Electrical Code.
- C. NFPA 701 – fire Tests for Flame resistant textiles and Films.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Manufacturer's Product Data: For each type of product including:
 - 1. Preparation instructions and recommendations.
 - 2. Styles, material description, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 3. Storage and handling requirements and recommendations.
 - 4. Mounting details and installation methods.
- C. Shop drawings: Plans, elevations, sections, product details. Installation details, operational clearances and relationship to adjacent work.
 - 1. Submit shop drawings on AutoCad.
 - 2. Field Verify Measurements as required.

- D. Window treatment Schedule: use same room designation as noted on construction drawings for all roller shades.
- E. Selection Samples: For each finish product specified, provide one set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- F. Maintenance Data: methods for maintaining roller shade, cleaning materials and method precautions, instructions for operating hardware and controls.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum twenty years experience in manufacturing products comparable to those specified herein.
- B. Installer Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified herein.
- C. Fire Test Response Characteristics: Passes NFPA 701 small and large scale vertical burn. Materials tested shall be identical to products proposed for use.
- D. Anti-Microbial Characteristics: "No-growth" per ASTM G 21 results for fungi ATCC 9642, ATCC 9644 and ATCC 9645.
- E. Mockup: Build mockup of one roller shade assembly for evaluation of mounting, appearance and accessories.
 - 1. Locate mock-up in window designated by Architect.
 - 2. Do not proceed with remaining work until mock-up is approved by Architect.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roller shades in factory packages, marked with manufacturer, product name, and location of installation using same room designations indicated on Drawings.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not install roller shades until construction and finish work in spaces, including painting, is complete and dry and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTY

- A. Roller Shade Hardware and Chain warranty: Manufacturer's standard non-depreciating twenty- five year limited warranty.

- B. Standard Shade cloth: Manufacturer's standard twenty-five year warranty.
- C. Roller shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Products: MechoShade Systems, Inc., located at: 42-03 - 35th St.; Long Island City, NY 11101; Tel: 718-729- 2020; Web: www.mechoshade.com. Or Owner approved equal during the bidding phase.

2.2 ROLLER SHADE TYPES

- A. Manually Operated Shades:

- 1. Mounting: Surface mounted with fascia.
- 2. Configuration: Single solar shade cloth.
- 3. Solar Shade cloths: See plans for locations of 2 types below.
 - a. Type 1 - Light Filtering Fabric: ThermoVeil 0900 or 3000, 3200, 3300 series Vertical Privacy Weave Fabric. 3000 Series is Reversible Satin/Diamond Weave at 1-2% Openness. Or approved equal Fabric Series at 1-2% Openness by ThermoVeil. Up to 2 Colors and Fabric Series to be selected by Owner/Architect.

2.3 SHADE CLOTH

- A. Visually Transparent Shade cloth: MechoShade Systems, Inc., ThermoVeil series, single thickness non-raveling 0.024-inch thick vinyl fabric, woven from 0.018-inch (0.457 mm) diameter extruded vinyl yarn comprising of 15 percent polyester and 85 percent vinyl on polyester.

2.4 SHADE BAND

- A. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem-pocket, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.
 - 1. Hem Pockets and Hem Weights: Fabric hem pocket with RF-welded seams (including welded ends) and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside a sealed hem pocket. Hem pocket construction and hem weights shall be similar, for all shades within one room.
 - 2. Shade Band and Shade Roller Attachment:
 - a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection. Provide for positive mechanical engagement with drive / brake mechanism.

- b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.
- c. Mounting spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
- d. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets are not acceptable.

2.5 SHADE FABRICATION

- A. Fabricate units to completely fill existing openings from head to sill and jamb-to-jamb, unless specifically indicated otherwise.
- B. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shadebands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.

2.6 COMPONENTS

- A. Access and Material Requirements:
 - 1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
 - 2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
 - 3. Use only Delrin engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester will not be acceptable.
- B. Manual Operated Chain Drive Hardware and Brackets:
 - 1. Provide for universal, regular and offset drive capacity, allowing drive chain to fall at front, rear or non-offset for all shade drive end brackets. Universal offset shall be adjustable for future change.
 - 2. Provide hardware capable for installation of a removable fascia, for both regular and/or reverse roll, which shall be installed without exposed fastening devices of any kind.
 - 3. Provide shade hardware system that allows for removable regular and/or reverse roll fascias to be mounted continuously across two or more shade bands without requiring exposed fasteners of any kind.
 - 4. Provide shade hardware system that allows for operation of multiple shade bands (multi-banded shades) by a single chain operator, subject to manufacturer's design criteria. Connectors shall be offset to assure alignment from the first to the last shade band.
 - 5. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connectors for drive mechanism connection to shade roller tube are not acceptable.

6. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel or heavier as required to support 150 percent of the full weight of each shade.
7. Drive Bracket / Brake Assembly:
 - a. MechoShade Drive Bracket model M5 shall be fully integrated with all MechoShade accessories, including, but not limited to: SnapLoc fascia, center supports, wall mount angles, and connectors for multi-banded shades.
 - b. M5 drive sprocket and brake assembly shall rotate and be supported on a welded 3/8 inch (9.525 mm) steel pin.
 - c. The brake shall be an over-running clutch design which disengages to 90 percent during the raising and lowering of a shade. The brake shall withstand a pull force of 50 lbs. (22 kg) in the stopped position..
 - d. The braking mechanism shall be applied to an oil-impregnated hub on to which the brake system is mounted. The oil impregnated hub design includes an articulated brake assembly, which assures a smooth, non-jerky operation in raising and lowering the shades. The assembly shall be permanently lubricated. Products that require externally applied lubrication and or not permanently lubricated are not acceptable.
 - e. The entire M5 assembly shall be fully mounted on the steel support bracket, and fully independent of the shade tube assembly, which may be removed and reinstalled without effecting the roller shade limit adjustments.
 - f. Drive Chain: #10 qualified stainless steel chain rated to 90 lb. (41 kg) minimum breaking strength. Nickel plate chain shall not be accepted.

2.7 ACCESSORIES

A. Fascia:

1. Continuous removable extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strips, or exposed fasteners.
2. Fascia shall be able to be installed across two or more shade bands in one piece.
3. Fascia shall fully conceal brackets, shade roller and fabric on the tube.
4. Provide bracket/fascia end caps where mounting conditions expose outside of roller shade brackets.
5. Notching of Fascia for manual chain shall not be acceptable.
6. Color of Fascia shall be selected from full range of options. Provide Chainset.

B. Chain Retainer: Provide and install chain retainer on all manually operated shades.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install roller shades level, plumb, square, and true according to manufacturers written instructions, and located so shade band is not closer than 2 inches (50 mm) to interior face of glass. Allow proper clearances for window operation hardware.
- B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
- C. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
- D. Engage Installer to train Owner's maintenance personnel to adjust, operate and maintain roller/shade systems.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 122413