

PROJECT MANUAL

PROJECT:

**WINDOW REPLACEMENT AT
SAVANNAH ARTS ACADEMY**

ARCHITECT'S PROJECT NO:

1603

SCCPSS PROJECT NO:

C17-07

DATE:

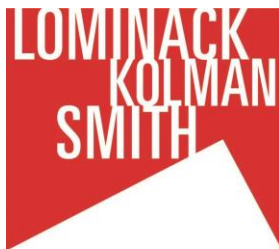
OCTOBER 28, 2016

LOCATED:

**500 WASHINGTON AVENUE
SAVANNAH, GA 31405**

ARCHITECT:

**LOMINACK KOLMAN SMITH
ARCHITECTS
POST OFFICE BOX 1587
SAVANNAH, GEORGIA 31401
923-232-5561, FAX 912-232-5562**



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SECTION 011000 – SUMMARY OF WORK

PART 1 - GENERAL

A. This Section includes the following:

- 1.2 Owner's occupancy requirements
- 1.3 Work restrictions

B. Stipulation Regarding Specifications:

All provisions in these Sections 012100, 012200, 012600, 012900, 013100, 013200, 013233, 013300, 014000, 015000, 016000, 017300, 017329, 017419, 017700, 017823, and 017839 are in addition to the provisions in the CONSTRUCTION CONTRACT BETWEEN CONTRACTOR AND OWNER. No provisions in these Specifications shall be construed to negate or diminish any requirements in the Construction Contract, but shall be applicable in addition to those requirements.

C. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.1 WORK UNDER OTHER CONTRACTS

1.1.1 The Owner reserves the right to perform construction or operations related to the project with separate Contractors on the site per Article 1.3.6 of the Construction Contract. The following separate Contracts have been awarded and the Contractor shall coordinate construction operations as required, or directed, by the Owner:

1.1.1.1 None

1.2 OWNER'S OCCUPANCY REQUIREMENTS

1.2.1 The Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Material Completion. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work. Design Professional will prepare a Certificate of Material Completion for each specific portion of the Work to be occupied before Owner occupancy.

1.3 WORK RESTRICTIONS

1.3.1 Work performed outside of school hours is preferred; however the Contractor shall observe the reasonable needs of nearby properties for quiet and minimized activity as defined in the City of Savannah noise ordinance requirements.

- a. Coordination with Campus Police: Access to school facilities during non-school hours shall be coordinated with Campus Police. Contractor shall obtain prior clearance to occupy the site or buildings by calling Campus Police dispatcher @ 912-395-5536. Contact Campus Police at end of work and ensure facilities are secure and Alarm Systems are activated.
- b. Tobacco Products are prohibited and not permitted on Board property.
- c. Existing Utility Interruptions: There will be no need to interrupt utilities.

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- d. Construction personnel shall at all times wear identification tags, shirts, and close toed shoes while on the job site.

END OF SECTION 011000

SECTION 012100 – ALLOWANCES

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements governing the following:
 - 1. Lump-sum contingency allowances.

1.2 SELECTION AND PURCHASE

- A. At Design Professional's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Design Professional from the designated supplier.

1.3 SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish shop and or fabrication drawings as required to coordinate installation.
- B. The performance of Work by Allowance shall not increase the Contract Time, unless demonstrated by the Contractor to cause an increase, and approved by the Design Professional and Owner.

1.5 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site and shall be included in the Contract Sum.

- B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the allowance, and shall included in the Contract Sum.
- C. At Project closeout, credit unused amounts remaining in allowances to Owner by Change Order.

1.6 UNUSED MATERIALS

- A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted
- B. If requested by Design Professional, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Design Professional, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

Allowance No. 1: \$25,000.00

Replacing interior sill, jamb, and head areas where existing damage is encountered prior to work by contractor. Use per board foot as the unit measure.

END OF SECTION 012100

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for processing Contract modifications.

1.2 REQUESTS FOR INFORMATION OR CLARIFICATION

- A. Request for Information (RFI): The Design Professional will issue a written RFI Response to each written Contractor inquiry. Unless specifically addressed, RFIs and RFI Responses shall not involve any adjustment to the Contract Sum or the Contract Time. RFI Responses, when issued, shall become a part of the Contract Documents, and as such must be adhered to. The effects of RFI Responses must be reflected in the Project Record Documents. Each RFI Response shall bear words addressed by the Design Professional to the Contractor: "The work shall be carried out according to the following instructions or clarifications issued in response to Request For Information # (enter RFI #), and in accordance with the Contract Documents without change to the Contract Sum or Contract Time. If you determine that this response does affect the Contract Sum or Contract Time, you shall notify the Design Professional immediately, and shall do so prior to proceeding with the Work in accordance with this response. Proceeding with the Work in accordance with this response without your prior notification, otherwise indicates your acknowledgement that there will be no change in the Contract Sum or Contract Time."

1.3 CHANGES IN THE WORK AFFECTING COST AND/OR TIME

- A. Proposed Change Order (CO) Requests: The Design Professional (or Owner) may issue a Proposed Change Order (PCO) Request, which is detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. The description will include supplemental or revised Drawings and Specifications. Each PCO will be numbered and dated, and subsequent communications regarding each PCO should give reference to the PCO number and date.
 - 1. Proposal Requests are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in PCO after receipt of Proposal Request, the Contractor shall submit a Change Order Proposal (COP), which is a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. Each COP must give reference to the number and date of the PCO to which it is in response.
 - 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. Pricing of Changes shall be in accordance with Articles 3.2.9 and 3.2.10 of the Construction Contract.
 - d. If affected, the Contractor's Construction Schedule shall be updated to indicate the

effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. This updated schedule shall be submitted with the COP. Use available total float before requesting an extension of the Contract Time. By omission of an updated Schedule as a part of a COP, the Contractor shall and does establish that the Schedule is not affected by the subject change. Any COP that proposes to affect Contract Time may be considered non-responsive if it does not include an updated Schedule.

- A. All change proposals shall include complete break-out and support documentation, including unit descriptions, unit quantities, unit costs (labor, material, other), burdens, and mark-ups. Portions of work that are to be deleted as a part of an overall change description shall be clearly reflected in the break-out; abbreviated descriptions which reflect only the net effects of reduced work scopes combined with increased work scopes will not be accepted. The Design Professional and Owner shall have full discretion in determining what measure of breakout and support is adequate and acceptable. No extension of Contract Time will be allowed for Construction delays attributable to the failure on the part of the Contractor to provide properly prepared and supported change proposals.
- B. Proposal and change request forms: Use forms that are acceptable to the Design Professional and Owner. If the Design Professional or Owner deems it necessary, the Contractor shall be required and shall agree to submit change proposals on forms provided by the Design Professional or Owner.
- B. Do not reflect any Change Order in the Schedule of Values or Application for Payment Continuation without an approved Change Order. The Design Professional or Owner shall have full discretion in establishing the manner in which Change Orders are added to the Schedule of Values and Continuation Sheets.

1.4 ALLOWANCE

- A. Allowance Adjustment: All charges against an Allowance shall be made in the form of a CO resulting from a PCO or RFI, shall be managed as any CO, and shall be invoiced against the Allowance line item in the Application for Payment. At project completion, any unused balance in each allowance will be returned to the Owner by deductive CO.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents. Submit claims within 14 days of receipt of the Change Order authorizing work to proceed. Owner will reject claims submitted later than 14 days after such authorization per Article 5.2.2 of the Contract.
 - 1. Do not include Contractor's or Subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
 - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

1.5 CHANGE ORDER PROCEDURES

- A. The Design Professional shall, immediately upon receipt, review each Proposed Change Order (PCO) for its technical and monetary merits. The Design Professional will not forward to the

Owner any advice or recommendation for any PCO that does not meet all requirements per Article 3.2.4 of the Contract Documents, but shall instead return it to the Contractor with specific instructions as to what must be done in order to rectify the problems with PCO. The Design Professional will provide written advice to the Owner regarding his opinion of each PCO, which will include a recommendation.

- B. Upon Owner's approval of a Proposed Change Order (PCO), Design Professional will issue a Change Order for approval by the Owner.

1.6 FORCE ACCOUNT CHANGE ORDER

- A. Force Account: Force Account work shall be undertaken only after receipt of an Approved Change Order, stating a maximum dollar amount (Stipulated Maximum Sum) beyond which no change work may be undertaken subject to amendment, for funding all costs of the Change Order as prescribed in Article 3.2.7.3 of the Contract.
- B. Documentation: The Contractor shall maintain detailed records on a time and material basis of work required by the Force Account Change Order.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.7 TRACKING, COORDINATION and MANAGEMENT of CLARIFICATIONS and CHANGES

- A. Some clarifications and changes will go through a process whereby they are assigned tracking numbers as more than one of the type documents defined in the articles above and in other Sections of these Specifications (i.e. RFIs, etc.). All documents created which pertain to the same subject shall make clear reference to other previous or concurrent documents on the subject.
 - 1. The Contractor shall establish and maintain current a single Log which tracks all these type documents. The form and content of this Log is subject to Design Professional and Owner approval, and may, if sufficient, be used to meet other stipulated tracking log requirements.

1.8 DELAYS AND EXTENSIONS OF TIME DUE TO WEATHER

- A. Delays caused by weather are non-compensable, and will be processed in accordance with Article 3.3.7.2 of the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. The Design Professional and Owner shall have full discretion in establishing the measure and depth of breakout that is required to be reflected in the Schedule of Values. Additionally, the Design Professional and Owner shall have full discretion in establishing the manner in which Change Orders are added to the Schedule of Values.
 - 2. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets Submittals Schedule and Contractor's Construction Schedule.
 - 3. Submit the Schedule of Values to Design Professional and Owner at earliest possible date but no later than 14 days after the issuance of the first Proceed Order. The Schedule of Values must precede and be approved by the Design Professional and Owner prior to the initial Application for Payment.
 - 4. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub schedules showing values correlated with each phase of payment.
- B. Format and Content: The Schedule of Values shall be in a format similar to AIA Document G703. Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Submit draft of Application for Payment Continuation Sheets.
 - 2. The approved Schedule of Values shall be used in the Continuation Sheets of all Applications for Payment, and shall not be altered except by the addition of approved Change Orders. Alterations to the approved line items in an Application for Payment without prior agreement will result in the return of the Application for Payment to the Contractor, for correction.
 - 3. The total of the items in the Schedule of Values shall equal the Contract Sum.
 - 4. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Use information indicated in the Contract Documents to determine quantities.
 - 5. Schedule Updating: Resubmit the Schedule of Values at least 10 days before the next Applications for Payment when Change Orders result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as

certified by Design Professional and paid by Owner.

- B. **Payment Application Times:** Progress payments shall be submitted to Design Professional no later than the last day of the month. The period covered by each Application for Payment is one month (minimum), ending on the last date of the application.

- D. **Payment Application Forms:** Use forms provided in the Construction Contract.

- E. **Application Preparation:** Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Design Professional 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 approved revisions were made. No changes shall be made to the Schedule of Values and Continuation Sheets without the prior approval of the Design Professional and Owner.
 - 2. Include amounts of Change Orders approved before last day of construction period covered by application. Add Change Orders to the Schedule of Values and Continuation Sheets in a manner that accurately reflects the manner in which they are authorized and issued.
 - 3. On the Application form, include in the "work completed" columns (previous and current) only the value of work that has actually been completed. The value of the current inventory of stored materials shall be accurately reflected in the "stored materials" column. When stored materials which have been previously invoiced remain stored at the time of subsequent Applications, their value shall remain in the "stored materials" column; only when previously-stored materials are incorporated into the work shall their value be shifted into the "current work completed" column. The inaccurate inclusion of the value of Stored Materials within the value of Work Completed will result in the return of the Application for payment with no action. There will be no exceptions.
 - 4. All Stored Materials for which payment is requested must be supported by sufficient documentation including invoices. If there remains stored a value of materials for which an invoice was presented with a previous Application for Payment, a copy of the same invoice shall be presented. When applicable, these material support invoices should bear notations to reflect the diminishing volume and hence value of the stored materials.
 - 5. Applications for Payment which reflect an incorrect or unapproved retainage rate or amount will be returned without action.
 - 6. The Design Professional will not mark, edit, or correct Applications for Payment in order to recommend them for payment. Applications which require corrections will be returned to the Contractor for the needed corrections.
 - 7. The Contractor may if he wishes submit a draft of each Application for Payment in advance of the actual Application, for the advance cursory review and informal approval of the Design Professional. Any such review and informal approval by the Design Professional shall not guarantee the formal review action by the Design Professional of the actual Application for Payment.

- F. **Transmittal:** Submit 4 signed and notarized original copies of each Application for Payment to Design Professional by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

- G. Waivers of Mechanic's Lien: If required by the Owner or Design Professional, with each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.
 3. Owner and Design Professional reserve the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner and in conformance with Georgia Law.
- H. All Applications for Payment involve additional required actions and submittals. Any Application for Payment submitted without compliance with these additional requirements will be returned without action.
1. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - a. List of subcontractors and suppliers.
 - b. Schedule of Values.
 - c. Contractor's Construction Schedule (preliminary if not final).
 - d. Submittals Schedule and Log (preliminary if not final).
 - e. All submittals and approvals of all items that require approval prior to commencement of work for which payment is sought.
 - f. List of Contractor's staff assignments.
 - g. List of Contractor's principal consultants.
 - h. Copies of building permits.
 - i. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - j. Initial progress report.
 - k. Report of preconstruction conference.
 - l. Certificates of insurance and insurance policies.
 - m. Performance and Payment Bonds.
 2. Periodic Applications for Payment: Administrative actions and submittals that must precede or coincide with submittal of each Periodic Application for Payment include the following:
 - a. Contractor's updated construction schedule, or a written statement that the most recent previous updated schedule remains accurate within 5%, which statement shall be subject to the concurrence of the Design Professional.
 - b. Updated current Submittals Schedule and Log.
 - c. Updated current RFI, PCO and CO Logs.
 - d. All actual submittals and approvals of all items that require approval prior to commencement of work for which payment is sought.
 - e. Daily Construction Reports for the period covered by the Application.
 - f. Minutes of all Meetings held during the period covered by the Application.
 - g. Local and/or MWBE Monthly Report Forms provided in the Bidding Documents

3. Application for Payment at Material Completion and Final Payment:
 - a. Contractor's updated construction schedule, or a written statement that the most recent previous updated schedule remains accurate within 5%, which statement shall be subject to the concurrence of the Design Professional.
 - b. Updated final Submittals Schedule and Log.
 - c. Updated final RFI, PCO and CO Logs.
 - d. All actual submittals and approvals of all items that require approval prior to commencement of work for which payment is sought.
 - e. Daily Construction Reports for the period covered by the Application.
 - f. Minutes of all Meetings held during the period covered by the Application.
 - g. Local and/or MWBE Monthly Report Forms provided in the Bidding Documents
 - h. Final close out documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SAFETY

- A. Safety is the responsibility solely of the Contractor in accordance with Section 1-General, Part 4-Protection of Persons and Property of the contract.
- B. The Contractor shall have in effect at all times an active Safety Plan, and the Design Professional may in the course of and as a prerequisite to approving Applications for Payment, request to see evidence that this required Safety Plan is in place and fully in effect.

1.3 DEFINITIONS

- A. Request For Information (RFI): Request from Contractor seeking interpretation or clarification of the Contract Documents.
- B. Design Professional's Supplemental Instruction (DSI): A supplemental instruction from the Design Professional. DSIs will commonly be issued when the Design Professional (as opposed to the Contractor) recognizes the need to provide interpretation or clarification, or to make a change in the Work which will not change the Contract Sum or Time. See Section 01 26 00, "Contract Modification Procedures" for additional information.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Pre-construction conference.
 5. Delivery and processing of submittals.
 6. Progress meetings.
 7. Pre-installation conferences.
 8. Project closeout activities.
 9. Startup and adjustment of systems.
 10. Project closeout activities.
- D. Electronic Communications: It will be acceptable and in most cases preferable that communications regarding the project be sent and received electronically, by email and email attachment. Exceptions would include Applications for Payment and executed Change Order Documents, and Notices of Claims or Disputes.

1.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Design Professional for resolution of such conflicts. Minor dimension changes and difficult installations

will not be considered changes to the Contract.

2. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches. Whenever feasible, in order to show appropriate information, no larger than 11 by 17 inches.
3. Number of Copies: Submit two copies of each submittal. Design Professional will return one copy.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 1. The Contractor shall facilitate and schedule all required meetings, including meeting agendas and reports of meeting minutes.
 2. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Design Professional of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Design Professional, within three days of the meeting.

- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Design Professional, but no later than 14 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, Design Professional, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Safety.
 - b. Tentative construction schedule.
 - c. Phasing.
 - d. Critical work sequencing and long-lead items.
 - e. Designation of key personnel and their duties.
 - 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, coordination with Campus Police, and utility outage process.
 - n. Work restrictions.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.

- q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
 - x. Working hours.
3. Minutes: Record and distribute meeting minutes to all attendees as well as to those not in attendance who should receive the meeting minutes.
- C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction. Hold pre-installation conferences for construction activities determined by either the Contractor or the Design Professional to require such a conference. Indications within these Specifications as to which construction activities require pre-installation conferences shall not be construed to set a limit.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Design Professional of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including

- required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of Owner and Design Professional, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: First, address all safety issues. 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. 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 and utility outage requirements.
 9. Work hours.
 10. Hazards and risks.
 11. Progress cleaning.
 12. Quality and work standards.
 13. Status of correction of deficient items.
 14. Field observations.
 15. RFIs.
 16. Status of proposal requests.
 17. Pending changes.
 18. Status of Change Orders.
 19. Pending claims and disputes.
 20. Documentation of information for payment requests.
 3. Minutes: Record the meeting minutes.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.

- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.7 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
 1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Design Professional.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation. Give clear reference to all attachments on the face of the RFI.
- C. RFI Format: Use RFI forms that are acceptable to the Design Professional and Owner.
 1. Identify each page of attachments with the RFI number and sequential page number.
- D. Design Professional's Action: Design Professional will review each RFI, determine action required, and provide an RFI Response as soon as possible, but in no case later than three business days after receipt. RFIs received after 1:00 p.m. will be considered as received the following working day.
 1. The following RFIs may be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for information that is already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Design Professional's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors, mistakes or other flaws.
 2. Design Professional's action may include a requirement that additional information be provided, in which case Design Professional's time for response will start again.

3. Design Professional's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
 - a. If Contractor believes the Design Professional's response to an RFI warrants change in the Contract Time or the Contract Sum, notify Design Professional in writing within seven days of receipt of the RFI response and submit a Proposed Change Order. Do not proceed with any additional cost work item until receipt of an approved Change Order.
 - E. On receipt of Design Professional's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Design Professional within seven days if Contractor disagrees with response.
 - F. RFI Log: Prepare, maintain, and submit a tabular Log of RFIs organized by the RFI number. Submit Log weekly. Include the following:
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Design Professional.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Design Professional's response was received.
 8. Identification of any related Design Professional's Supplemental Instruction (DSI), Request for Proposal (RFP), Proposed Change Order (PCO), Bulletin Drawing (BD), and executed Change Order (CO), as appropriate.
- 1.8 TRACKING, COORDINATION and MANAGEMENT of CLARIFICATIONS and CHANGES
- A. Some clarifications and changes will go through a process whereby they are assigned tracking numbers as more than one of the type documents defined in the articles above and in other Sections of these Specifications. All documents created which pertain to the same subject shall make clear reference to other previous or concurrent documents on the subject.
 1. The Contractor shall establish and maintain current a single Log which tracks all these documents. The form and content of this Log is subject to Design Professional and Owner approval, and may, if sufficient, be used to meet other stipulated tracking Log requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 01320 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Submittals Schedule.
 - 3. Daily construction reports.
 - 4. Field condition reports.
- B. See Division 01 Section "Payment Procedures" for submitting the Schedule of Values.
- C. See Division 01 Section "Photographic Documentation" for submitting construction photographs.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. Critical Path Method (CPM): CPM is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time belongs to Owner.
- E. Fragment: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- F. Major Area: A story of construction, a separate building, or a similar significant construction element. See Section 01100, "Summary."

1.3 SUBMITTALS

- A. Submittals Schedule: Submit three copies of schedule within 30 days of the effective date of the contract. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Design Professional's final release or approval.

- A. Contractor's Construction Schedule: Submit two copies of initial schedule, large enough to show entire schedule for entire construction period.

- B. CPM Reports: Concurrent with CPM schedule, submit two copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.

- C. Daily Construction Reports: Submit one copy of daily construction reports, accompanied by corresponding photographs, at weekly intervals.

- D. Field Condition Reports: Submit immediately at time of discovery of differing or noteworthy conditions.

1.4 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

- C. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Comply with all requirements, including those of Section 013300, "Submittal Procedures," and

coordinate submittal requirements with the project schedule requirements.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Proceed Order to date of Final Completion.
1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each facade or separate courtyard as a separate numbered activity for each principal element of the Work. Comply with the following:
1. Activity Duration: Define activities so no activity is longer than 21 days, unless specifically allowed by Design Professional.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 4. Material Completion: Indicate completion in advance of date established for Material Completion, and allow time for Design Professional's administrative procedures necessary for certification of Material Completion.
- D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase. Work shall be phased so that as few individual classrooms as possible are disturbed at a time, with the exception of summer schedule dates. No more than three classrooms at a time shall undergo window replacement concurrently unless otherwise directed by the Design Professional.
 2. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Use of premises restrictions.
 - b. School calendar restrictions to include student testing (quiet days) and school calendar versus summer schedule work habits.
 - c. Seasonal variations.
 - d. Environmental control.
 3. Work Stages: Indicate important stages of construction for each major portion of the Work.
- E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Proceed Order, Material Completion, and Final Completion, and the following interim milestones, including for applicable parts as established in Section 01100, "Summary":
1. All scheduled pre-installation conferences
 3. Dry-in, window openings
 4. Certificate of Occupancy (delivered to Design Professional)

- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragments to demonstrate the effect of the proposed change on the overall project schedule.
- F. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
 - 1. Identification of activities that have changed.
 - 2. Changes in early and late start dates.
 - 3. Changes in early and late finish dates.
 - 4. Changes in activity durations in workdays.
 - 5. Changes in the critical path.
 - 6. Changes in total float or slack time.
 - 7. Changes in the Contract Time.

2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site, to include:
 - 1. List of subcontractors at Project site, including the approximate man-power presence for each subcontractor.
 - 2. Equipment at Project site.
 - 3. Material deliveries.
 - 4. High and low temperatures and general weather conditions.
 - 5. Accidents and unusual events.
 - 6. Stoppages, delays, shortages, and losses.
 - 8. Orders and requests of authorities having jurisdiction.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with an RFI. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate Actual Completion percentage for each activity.

- B. Distribution: Distribute copies of approved schedule to Design Professional, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.
 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. See Division 01 Section "Closeout Procedures" for submitting digital media as Project Record Documents at Project closeout.

1.2 SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same label information as corresponding set of photographs.
- B. Construction Photographs: Submit a digital image of all photographs weekly, along with daily construction reports.
 - 1. Format: as approved by Design Professional.
 - 2. Identification: Each digital image shall have a unique identifier, and shall be accurately date stamped, or the accurate date shall be ascertainable by electronic file date. Tag and/or transmit the photographs in a manner so as to clearly identify them as photographs of this project. Also, for digital images for which it is necessary or for which requested by the Design Professional, provide a description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - 3. Digital Images: Submit a complete set of digital image electronic files as a Project Record Document on CD-ROM. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, un-cropped.

1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who is familiar with the project and the progress of the work.

1.4 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.5 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Design Professional and Owner

for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: In format as approved by Design Professional.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key elevations with each set of construction photographs that identifies each photographic location.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in filename for each image.
 - 2. Field Office Images: Maintain one set of images on CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Design Professional.
- C. Preconstruction Photographs: Before commencement of demolition, take digital photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Design Professional.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take 36 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take 36 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
- D. Periodic Construction Photographs: Take no fewer than two digital photographs before of existing units before removal, two during removal, two during installation and two upon completion of each window opening. Select vantage points to show status of construction and progress since last photographs were taken.
- E. Additional Photographs: Design Professional may issue requests for 100 additional digital photographs, in addition to periodic photographs specified. These additional photographs are included in the Contract Sum.
 - 1. Three days' notice will be given, where feasible.
 - 2. In emergency situations, safely take additional photographs immediately upon request.
 - 3. Circumstances that could require additional photographs include, but are not limited to, the following:

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- a. Special events planned at Project site.
- b. Immediate follow-up when on-site events result in construction damage or losses.
- c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
- d. Material Completion of a major phase or component of the Work.
- e. Extra record photographs at time of final acceptance.

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting all project submittals, including product data, product certificates, manufacturer certificates, test reports, shop drawings, color and finish selection information, samples, and other submittals.
- B. See also all other Divisions and Sections for additional submittal information as required by the Design Professional.

1.2 SUBMITTAL TYPES / DEFINITIONS

- A. Each submittal must be identified according to the following submittal types:
 - 1 Informational Submittal: Submittal item that is made for the purpose of supplying required information or information which demonstrates compliance with project requirements. While an Informational Submittal does not require the Design Professional's or Consultant's responsive action, it may be rejected for not complying with requirements, in which case the item would be required to be re-submitted. Also, in certain instances, corrective work may be required as the result of a rejected Informational Submittal.
 - 2 Action Submittal: Submittal item that is made for the purpose of supplying required information or information which demonstrates compliance with project requirements, and which does require the Design Professional's or Consultant's responsive action. Except as directed or indicated otherwise, an Action Submittal shall be submitted and approved prior to the commencement of the work to which it pertains.
 - 3 Administrative Submittal: Submittal item that is required as a part of general project management and administration. Most or all Administrative Submittals will be Informational Submittals.
 - 4 Technical Submittal: Submittal item that pertains to a particular aspect of the actual work. Most Technical Submittals will be Action Submittals, although some will instead be Informational Submittals.
 - 5 Periodic Submittal: Submittal item that is required during the course of construction (such as manufacturing or installation reports). Most or all Periodic Submittals will be Informational Submittals.
 - 6 Job-End Submittal: Submittal item that is required as a part of project close-out, operation and maintenance information, warranties, record documents, demonstration and training, or special requirements associated with Material and Final Completion. Do not submit Job-End Submittals with Technical Submittals. Most or all Job-End Submittals will be Informational Submittals.
 - 7 Component Submittal: Submittal (more accurately, transmittal) of actual components, such as extra materials, tools, or parts that are specified to be required. While a Component Submittal does not require the Design Professional's or Consultant's responsive action, it may be rejected for not complying with requirements, in which case the item would be required to be re-submitted. Also, corrective work may be required as the result of a rejected Informational Submittal.
- B. Do not transmit or bind submittals of different types together when it would encumber proper

handling or action by the Design Professional; for instance, do not bind Informational Submittals together with Action Submittals.

1.3 SUBMITTAL PROCEDURES

- 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. Design Professional may withhold action on a submittal requiring coordination with other submittals until related submittals are received. Failure on the part of the Design Professional to notify the Contractor that action on a submittal is pending related submittals shall not be cause for an extension in the Contract Time.
- B. Submittals Schedule/Log: Maintain and periodically submit a Schedule/Log of Submittals. Coordinate submittal and action dates with the Project Schedule, allowing adequate time { 14 calendar days minimum} for review and action by the Design Professional, re-submittal, re-review and action, field measuring, ordering, manufacturing, fabrication, and delivery.
1. Include for each line entry in the Submittal Schedule/Log columns to indicate no less than the following information:
 - a. Number
 - b. Section Article Number
 - c. Subject or Description
 - d. Content
 - e. Type Product
 - f. Type
 - g. Date, scheduled
 - h. Date, actual
 - i. Review Action Date, scheduled (for Action Submittals)
 - j. Review Action Date, actual (for Action Submittals)
 - k. Review Action
 2. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 3. Submit current updated Submittal Schedule / Logs no less frequently than monthly and more frequently when required by the Design Professional.
- C. Identification / Transmittal of Submittals: Use the Project "Submittal Cover / Transmittal Sheet" form, which follows this Section, to transmit ALL submittal items, without exception. Complete all information on the form, entering "NA" in blanks that are not applicable. For Action Submittals, attach a fully completed copy of the "Project Submittal Cover / Transmittal Sheet" to the front of each and every copy of each and every submittal. A partially editable electronic copy of the "Project Submittal Cover / Transmittal Sheet" will be made available to the Contractor upon request. Submittals that are not properly and correctly identified will be returned with no action, a re-submittal will be required, and attributable delays will not be considered as cause for an extension in Contract Time.

- D. Processing Time: Allow enough time { 14 calendar days minimum } for submittal review, including time for re-submittals, as follows. Time for review shall commence on Design Professional's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.
1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Design Professional 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. Re-submittal Review: Allow 14 days for review of each re-submittal.
- E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- E. Additional Copies: Unless additional copies are required for final submittal, and unless Design Professional observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. All copies, including additional copies submitted for maintenance manuals less three, will not be marked with action taken and will be returned.
- F. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are returned with a review stamp and note by either the Design Professional or his Consultant that does not indicate the requirement that they be resubmitted.
 4. The Design Professional shall be responsible for an initial and one subsequent review of the submittal. The Contractor shall be liable for additional cost of subsequent reviews due to non-compliance.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, and installers; authorities having jurisdiction; and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Use only final submittals with mark indicating a review stamp and note by either the Design Professional or his Consultant that does not indicate the requirement that they be resubmitted.
- J. All submittals shall be made in a manner that will accommodate the progress of construction. No extension of Contract Time will be issued for construction delays caused by untimely submittals. All Action Submittals and all other submittals that are deemed relevant to the progress of the Work shall be provided according to the approved Submittals Schedule, and all such submittals shall be provided no later than within 60 days of commencement of work or other notice to provide submittals, or within 15% of the project schedule, whichever time period is shortest.

- K. If at the time of an Application for Payment, the provision of submittals is behind schedule, based on the current approved Submittal Schedule, the Contractor may not be allowed to request funds for General Conditions, which, if requested, will cause the Application to be returned without action.
- L. If the Agreement allows for the reduction of retainage, this reduction shall not be approved or allowed until all Action Submittals and all other submittals that are deemed relevant to the progress of the Work have been approved.

1.4 CONTRACTOR'S USE OF DESIGN PROFESSIONAL'S CAD FILES

- A. General: At Contractor's written request, copies of Design Professional's electronic drawing files may be provided on a limited basis to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. The Design Professional assumes no liability for reliance upon these documents instead of actual physical measurements or examination of actual field conditions. The Design Professional's drawings are copyrighted and may not be used for any purposes other than for the construction of this building at this time and place.
 - 2. Each request must include specific information about the intended use of the electronic drawings, and the type electronic drawing file sought, and a list of the specific drawing sheets sought. These will be provided in response to each request at the sole discretion of the Design Professional.

PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
 - 1. Except as approved by the Design Professional, submit all Action Submittals required by each Section at one time. Bind and consolidate these to the greatest extent possible, taking care that each individual submittal requirement is included.
- 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 printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Manufacturer's catalog cuts.
 - e. Compliance with specified referenced standards.
 - f. Testing by recognized testing agency.
 - 4. Number of Copies: Submit copies of Product Data in a quantity to meet Contractor's requirements, considering that the Design Professional will retain three copies. Mark up

and retain one returned copy as a Project Record Document.

- 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 of Design Professional's electronic Drawings is otherwise permitted.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Shopwork manufacturing instructions.
 - f. Templates and patterns.
 - g. Schedules.
 - h. Notation of coordination requirements.
 - i. Notation of dimensions established by field measurement.
 - j. Relationship to adjoining construction clearly indicated.
 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 but no larger than 30 by 40 inches.
 3. Number of Copies: Submit copies in a quantity to meet Contractor's requirements, considering that the Design Professional will retain three copies.
- C. Samples: Submit to the project site one double or triple set of double-hung sash windows with dividing mullions for review of kind, color, pattern, dimension, and texture for a check of these characteristics with other elements and for a comparison of these characteristics. Sample Submittal will be reviewed as an example of an installable unit, the characteristics of which should match those detailed in prior submittals.
1. Sample should be presented with all related components and accessories installed for review of the unit as a whole.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 - 3.. Samples for Verification: Submit full-size units 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.
 4. Disposition: Upon approval of Sample Submittal with no exceptions taken, the Sample Submittal shall be installed in a single masonry opening on site, the location of which shall be selected by the Design Professional, as part of an Installation Submittal.
- G. Installation Submittal: Contractor shall install one approved Sample Submittal window unit set to include a dividing mullion in a location decided by the Design Professional. Window unit set shall be a set of two or three double-hung sash windows, i.e. a "double" or "triple" window unit.

- 1 Sample shall be installed as proposed with all necessary components and finishes included.
 - 2 Installation Submittal will be examined from the interior and exterior for review of the treatment of historic elements, likeness to existing windows, and placement within opening.
 - 3 All caulks, sealants, or other finishes utilized will be reviewed as components of Installation.
 - 4 Upon approval with no exceptions taken, the Installation Submittal will serve as an approved mock-up for the install of all other replacement windows on the premises.
- H. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
1. Number of Copies: Submit copies of product schedule or list in a quantity to meet Contractor's requirements, considering that the Design Professional will retain three copies.
- F. Applications for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- G. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. List of Subcontractors and Suppliers, including Local and/or MWBE participants: 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 company names, addresses, contacts, phone numbers, fax numbers, and email addresses.
1. Number of Copies: Submit no fewer than four copies of list, unless otherwise indicated.
 2. Local and/or MWBE Monthly Report: Submit with Monthly Payment Application on Forms specified in the original solicitation documents.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit three copies of each submittal, unless otherwise indicated. Design Professional will not return copies.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements." Instruct all testing and reporting agents to forward copies of all documents directly to the Design Professional.
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names

and addresses of Design Professionals and owners, and other information specified.

- E. **Installer Certificates:** Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- F. **Manufacturer Certificates:** Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- G. **Product Certificates:** Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- H. **Material Certificates:** Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- I. **Material Test Reports:** Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- J. **Product Test Reports:** Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- K. **Maintenance Data:** Prepare written and graphic instructions and procedures for operation and normal maintenance of product. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- L. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product. Include name of product and name, address, and telephone number of manufacturer.
- M. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
 - 1. Statement on condition of substrates and their acceptability for installation of product.
 - 2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
- N. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- O. **Construction Photographs:** Comply with requirements specified in Division 01 Section "Photographic Documentation."
- P. **Material Safety Data Sheets (MSDSs):** Submit information directly to Owner; do not submit to Design Professional.
 - 1. Design Professional will not review submittals that include MSDSs and will return them

for re-submittal.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

All submittals shall be reviewed and approved by the Contractor prior to submittal to the Design Professional. Submittals that are not fully and properly reviewed by the Contractor will be returned with no action, and a re-submittal will be required, and attributable delays will not be considered as cause for an extension in Contract Time. 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.

3.2 DESIGN PROFESSIONAL'S ACTION

- A. General: Design Professional will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Design Professional will review each submittal, make marks to indicate corrections or modifications required, and return it. Design Professional will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational Submittals: Design Professional will review each submittal and will not return it, or will return it if it does not comply with requirements.
- D. Partial submittals are not acceptable, will be considered non-compliant, and will be returned without review.
 - 1. Should the Contractor proceed with the Work without the required full review of complete submittals, he does so at his sole risk. In any event and at any time it is determined that a missing portion of a submittal is needed in order to ensure compliance with the Contract Documents; the Contractor shall immediately submit the missing portion. No increase in the Contract Amount or the Contract Time will be allowed, nor will any variations from the requirements of the Contract Documents be allowed as a result of the failure on the part of the Contractor to provide complete submittals, or as a result of the failure of the Design Professional to garner complete submittals from the Contractor.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.
- F. In no case shall any review action or comments on the part of the Design Professional or his Consultants be construed to authorize compensable extra Work or an increase in Contract Amount or Contract Time.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
 - 1. Except for the expense of inspections and testing required by Chapter 17 of the IBC, the expense of all required on-site quality-control inspections and testing shall be borne by the Contractor.
 - 2. The Contractor's responsibility for Quality of Materials and Installation is specified in Article 2.1.4 of the Contract. The Contractor shall submit a written Quality Control program.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Design Professional, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. See Divisions 02 through 33 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Design Professional.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.
- D. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- E. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e.,

plant, mill, factory, or shop.

- F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

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

1.4 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.

8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.5 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 2. NVLAP: A testing agency accredited according to NIST's National Voluntary

Laboratory Accreditation Program.

- H. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. **Mockups:** Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Design Professional.
 - 2. Notify Design Professional seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Design Professional's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise indicated.
- J. **Laboratory Mockups:** Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 02 through 16.

1.6 **QUALITY CONTROL**

- B. **Tests and inspections not explicitly assigned to Owner are Contractor's responsibility.** Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified here or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least 24 hours (or as required by testing agencies) in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

- E. Testing Agency Responsibilities: Cooperate with Design Professional and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Design Professional and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 - 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 - 6. Do not perform any duties of Contractor.

- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field curing of test samples.
 - 5. Delivery of samples to testing agencies.
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 7. Security and protection for samples and for testing and inspecting equipment at Project site.

- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
 - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 - 2. Notifying Design Professional and Contractor promptly of irregularities and deficiencies

- observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Design Professional with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Material Completion which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 COORDINATION

- A. General: It is the sole responsibility of the Contractor to coordinate with the testing agency(s) and inspection authorities to ensure that all required tests and inspections are performed.

3.2 ACCESS TO WORK

- A. General: It is the responsibility of the Contractor to provide safe and unencumbered access for the Design Professional and other testing and inspection personnel to all locations requiring testing or inspection. This in some cases may require and include the lifting of personnel using power equipment on the project site.

3.3 REPAIR AND PROTECTION

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

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. See Division 01 Section "Execution" for progress cleaning requirements.

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Design Professional, all openings are closed with permanent construction or substantial temporary closures.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Design Professional, testing agencies, and authorities having jurisdiction.

1.4 SUBMITTALS

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

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top rails and galvanized barbed-wire top strand.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide concrete or galvanized steel bases for supporting posts.
- C. Provide and maintain during the Construction period one (1) project sign as specified by the Owner. The maintenance and upkeep of the sign shall be the responsibility of the Contractor.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading. Provide unit(s) of adequate size to serve needs of project, including jobsite progress meetings.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

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

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.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead, or underground, as conditions required.
- B. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.

1. At each telephone, post a list of important telephone numbers including police and fire departments, Contractor's home office, Design Professional's office, principal subcontractors' field and home offices.

2. Provide superintendent with cellular telephone for use when away from field office.

C. Electronic Equipment: In field office, provide and maintain a computer with on-line capability and electronic mail. Provide and maintain also a printer which can be used to print communications and bulletin drawings.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide noncombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Material Completion. Remove before Material Completion. Personnel remaining after Material Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Coordinate temporary parking areas with facility personnel.

D. Project Identification and Temporary Signs: Provide Project identification and other signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

G. 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.

H. Temporary Use of Permanent Stairs: Cover existing permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct

construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

- D. Tree and Plant Protection: Install temporary fencing located outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion. Protect shrubs from excessive damage.
- E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- F. 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 weather tight enclosure for building exterior.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Material Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Material Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves the right to take possession of Project identification signs.
 - 2. At Material Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. See Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
- C. See Divisions 02 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

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

1.3 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and

title and Drawing numbers and titles.

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

1. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Design Professional will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
 - b. Use product specified if Design Professional cannot make a decision on use of a comparable product request within time allocated.

- C. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

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

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:

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

C. Storage:

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

1.6 PRODUCT WARRANTIES

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

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

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

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Design Professional will consider requests for substitution if received within 5 days after the Proceed Order. Requests received after that time may be considered or rejected at the discretion of the Design Professional.
- B. Conditions: Design Professional will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional will return requests without action, except to record noncompliance with these requirements:
 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Design Professional for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.
 8. Requested substitution has been coordinated with other portions of the Work.
 9. Requested substitution provides specified warranty.
- C. Should, subsequent to the approval or implementation of a substitution, there occur a discovery of an unforeseen circumstance or condition that is attributable to the substitution, the Contractor shall be responsible to bear any additional costs or to return to the Owner any cost savings resulting from the discovery.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Design Professional will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional will return requests without action, except to record noncompliance with these requirements:
 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

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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 Design Professionals and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: Before beginning work, investigate and verify the existence and location of other construction affecting the Work.
- B. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine for suitable conditions where products and systems are to be installed.
 - 3. 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.

- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Design Professional. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 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.
- 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 Material Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste.

Mark containers appropriately and dispose of legally, according to regulations.

- B. Site: Maintain Project site free of waste materials and debris.
 - B. 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: Interior plaster is not to be disturbed. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Material Completion. If plaster is disturbed, the Design Professional shall be notified immediately and an assessment made to determine if remedial repairs are required.
 - G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
 - H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Material 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.
- 3.7 STARTING AND ADJUSTING
- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
 - B. Adjust operating components for proper operation without binding.
 - D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components installation, comply with qualification requirements in Division 01 Section "Quality Requirements."
- 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 Material Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.
Comply with requirements in Division 01 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Recycling non-hazardous demolition and construction waste.
 - 2. Salvaging nonhazardous demolition and construction waste.
 - 3. Disposing of non-hazardous demolition construction waste.
 - 4. Removal and disposal of existing loose items inside the building.
- B. See Division 02, Section 024119 - Selective Demolition for disposition of hazardous waste.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. 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.
- C. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

1.3 PERFORMANCE GOALS

- A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.
- B. Salvage/Recycle Goals 01: Owner's goal is to salvage and recycle as much non-hazardous construction waste as possible. Owner has established minimum goals for the following materials:
 - 1. Recycle 75% of all metals.
 - 2. Reduce landfill waste disposal by 25%.

1.4 SUBMITTALS

- A. Waste Management Plan: Submit for approval 3 copies of plan within 7 days of date established for the Proceed Order.

1.5 QUALITY ASSURANCE

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

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification and waste reduction work plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.
- D. Forms: Prepare waste management plan on forms satisfactory to the Design Professional.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Design Professional. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - 1. Distribute waste management plan to everyone concerned within three days of submittal.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. 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.
 - 1. Designate and label specific areas on Project site necessary for separating materials that

- are to be salvaged, recycled, reused, donated, and sold.
2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.
- B. Salvaged Items for Sale or Donation: Window sashes that are able to be salvaged shall be retained and donated as architectural salvage and not be included in project waste.
- C. Salvaged Items for Owner's Use:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.

3.3 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

3.4 DISPOSAL OF WASTE

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

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. See Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Material and Final Completion.
- C. See Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
- D. See Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
- E. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 MATERIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Material Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work. Include occupancy permits, operating certificates, and similar releases.
 - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, and similar final record information.
 - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 7. Complete final cleaning requirements, including touchup painting.
 - 8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Material Completion. On receipt of this written request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare the Certificate of Material Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Design Professional, that must be completed or corrected before certificate will be issued.

1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Submit certified copy of Design Professional's Material Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Design Professional. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of this written request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional 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.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction. Use CSI Form 14.1A.
 1. Organize list of spaces in sequential order, starting with the site, then the building exterior then proceeding to the building interior, from lowest floor to highest floor.
 2. Organize items applying to each space by window opening, including categories for ceiling, individual walls and floors in area of opening.

A.5 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Design Professional for designated portions of the Work where commencement of warranties other than date of Material Completion is indicated.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 4. Provide all warranties available from product and system manufacturers, regardless of whether each warranty is specifically called for in these Specifications.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. **General:** Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- C. **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 Material Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior window units and surrounding surfaces soiled by work to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces.
 - f. Vacuum carpet and similar soft surfaces in area of work; shampoo if visible work related soil or stains remain.

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- g. Clean windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish glass, taking care not to scratch surfaces.
 - h. Remove labels that are not permanent.
 - i. Touch up and otherwise repair and restore work related marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored.
 - j. Leave Project clean and ready for occupancy.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following per Article 6.4.1; Final Documents, of the Contract.
 - 1. Maintenance manuals for the care and maintenance of products and finishes.
- B. See Divisions 02 through 33 Sections for specific operation and maintenance manual requirements for the Work in those Sections.

1.2 SUBMITTALS

- A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection. Design Professional will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Design Professional's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Design Professional's comments.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Organization: Since this project has only one product being installed, it will have only one section containing the required information. Each manual shall contain a title page, table of contents, and manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Design Professional.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- C. Manual Contents: Organize into a manageable size.
 - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

- a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual.

2.2 PRODUCT MAINTENANCE MANUAL

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

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

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- B. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

- C. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous Submittals
 - 4. Record Documents
- B. See Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
- C. See Divisions 02 through 32 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.2 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Submit one set of full size marked-up Record Prints
 - 2. Submit one set half size prints size marked-up Record Prints.
- B. Record Specifications: Comply with the following:
 - 1. Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Comply with the following:
 - 1. Submit one copy of each Product Data submittal.
- D. Electronic Copies: Using the Record Drawings and Specifications provided by the Construction Professional, the Design Professional shall provide the following:
 - 1. Record Drawings: Submit two copies of electronic media (disk, memory card, etc.) in "PDF" format and "DWG/CAD" format. (Submitted from design professional to SCCPSS)
 - a. PDF drawings to be created with layers that can be turned on and off (no raster scan PDF will be accepted).
 - b. Electronic File Naming to be as follows:
 - i. School letters code-Sheet number.PDF
 - 1. Example for Beach High School – Sheet A1.0:"BHS-A1.0.PDF"
 - 2. Specifications: Submit two copies of electronic media (disk, memory card, etc.) in "PDF" format and "DOC" format. (submitted from design professional to SCCPSS)

- a. Electronic File Naming to be as follows:
 - i. School letters code-Specification number-Section Title.PDF
 1. Example for Beach High School – Spec. Section 04 23 13 – Brick Masonry:”BHS-04 23 13-Brick Masonry.PDF”
- E. Miscellaneous Submittals
 1. Submit one hard copy of any pertinent documents and one electronic copy in PDF Format
- F. Municipality Close Out Documents
 1. Submit as a record of submittal one hard copy of any documents required by authority having jurisdiction and one electronic copy in PDF Format.
 - a. Submit CAD file in DWG format if produced as part of this contract.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 2. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 3. Mark record sets with erasable, red-colored pencil/or PDF mark-up. 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. Record CAD Drawings: Immediately before inspection for Certificate of Material Completion, review marked-up Record Prints with Design Professional, to assist the Design Professional in preparing a full set of corrected CAD Drawings of the Contract Drawings, as follows:
 1. Format: “DWG” format AutoCAD version 2000 or greater.
 2. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
 3. Resolve any instances of uncertainty with Design Professional.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Design Professional.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

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

2.3 RECORD PRODUCT DATA

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

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.5 MUNICIPALITY RECORD SUBMITTALS

- A. Assemble all paper documents submitted to the authority having jurisdiction. Bind or file these records with and identifying each for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as

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they occur; do not wait until the end of Project. Project Record Documents will be reviewed periodically during the course of the project, as a part of the payment authorization procedure.

- 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 Design Professional's reference during normal working hours.

END OF SECTION 017839

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

1.2 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.3 PRE-INSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of selective demolition activities with starting and ending dates for each activity.
- C. Pre-demolition photographs or video.

1.5 CLOSEOUT SUBMITTALS

- A. Inventory of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
1. Before selective demolition, Owner will remove the following items:

- a. Desks, chairs, window treatments, and other furnishings in areas of demolition activity.
 - C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
 - D. Hazardous Materials: Lead Paint exists in 25 samples of sashes, frames and trim taken at the site. All samples contained lead in varying amounts. The Contractor should assume all materials to be removed contain lead.
 - 1. Hazardous materials will be removed by the Contractor as a part of the Work.
 - 2. Materials will be removed and disposed of in compliance with OSHA regulation 29 CFR 1926.62 – Lead Exposure in Construction.
 - 3. Materials will be disposed of in compliance with the Resource Conservation Recovery Act (RCRA).
 - E. Storage or sale of removed items or materials on-site is not permitted.
 - F. Utility Service: Maintain existing utilities and protect them against damage during selective demolition operations.
 - G. Arrange selective demolition schedule so as not to interfere with Owner's operations.
- 1.7 WARRANTY
- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Perform a survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- B. Inventory and record the condition of items to be removed and salvaged.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent facilities to remain.
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
 - 2. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches.
 - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 6. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Salvaged Items:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 CLEANING

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and nailers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

1.3 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For the following, from ICC-ES:
 - 1. Preservative-treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
- B. Maximum Moisture Content of Lumber: 15 percent

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA U1; Use Category UC3b. See the Evaluations in Section 061000 "Rough Carpentry" for information about treatment chemicals.
 - 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 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.

2.3 DIMENSION LUMBER FRAMING

- A. Other Framing: No. 2 in any of the following species:
 - 1. Southern pine; SPIB.
 - 2. Douglas fir-larch; WCLIB or WWPA.
 - 3. Delete "Southern pine; SPIB.
 - 4. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
- B. Dimension Lumber Items: No. 2.

2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- C. Securely attach carpentry work to substrate by anchoring and fastening as required.

END OF SECTION 061053

SECTION 064600 - WOOD TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior trim that has to be replaced due to damage discovered during removal of existing window units or damaged during removal or installation.
2. Wood furring, blocking and shims for installing woodwork items where required.

1.2 ACTION SUBMITTALS

- A. Submit a description of condition of any interior trim (sill and casing only) requiring replacing due to damage discovered during removal of existing window units or cause by the removal or installation process. Include opening identification number, a photograph or photographs of the condition, and the scope of replacement work. There is an allowance provided in Section 012100 - Allowances for discovered conditions. The Contractor is responsible for correcting damages caused by the removal or installation processes.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Installation shall be accomplished by skilled and experienced finish carpenters. New trim carpentry shall be of same quality material as original and fitted to align in a precise manner.

1.4 FIELD CONDITIONS

- A. Environmental Limitations for Interior Work: Do not install interior wood trim until the new window units are installed.

PART 2 - PRODUCTS

2.1 WOOD TRIM, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of wood trim indicated for construction, finishes, installation, and other requirements.

2.2 INTERIOR STANDING AND RUNNING TRIM FOR OPAQUE FINISH

- A. Grade: Premium.
- B. Wood Species: Any closed-grain hardwood.

2.3 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of wood trim and quality grade specified unless otherwise indicated.
 - 1. Wood Moisture Content for Interior Materials: 5 to 10 percent.

2.4 MISCELLANEOUS MATERIALS

- A. Interior Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

2.5 FABRICATION

- A. Fabricate wood trim to dimensions, profiles, and details to match adjacent materials.
- B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members except for members with ends exposed in finished work.
- C. Opaque Finish for Interior Trim:
 - 1. Grade: Premium.
 - 2. Finish: System - 4, water-based latex acrylic.
 - 3. Color: Match existing adjacent trim.
 - 4. Sheen: Semi-gloss, 46-60 gloss units measured on 60-degree gloss meter per ASTM D 523.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition wood trim to average prevailing humidity conditions in installation areas.

3.2 INSTALLATION

- A. Grade: Install wood trim to comply with same grade as item to be installed.

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- B. Install wood trim level, plumb, true, and straight. Shim as required with concealed shims.
- C. Scribe and cut wood trim to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- D. Anchor wood trim to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.

END OF SECTION 064600

SECTION 085200 – WOOD WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Double-hung windows.
 - 2. Picture windows.

1.2 ACTION SUBMITTALS

- A. Product Data: Manufacturer's product data and installation guides.
- B. Shop Drawings: Drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.
- C. Color Samples: Selection and verification samples, including the following:
 - 1. Hardware: Samples indicating typical finish on window hardware.
 - 2. Exterior Cladding: Submit color samples of exterior cladding.
 - 3. Interior Finishes: Submit color samples of interior finishes.

1.3 INFORMATIONAL SUBMITTALS

- A. Quality Assurance/Control Submittals:
 - 1. Performance Data: Manufacturer's published performance data for specified products.

1.4 CLOSEOUT SUBMITTALS

- A. Warranty documents specified herein.
- B. Owner's Manual: Bound manual clearly identified with project name, location, and completion date. Identify type and size of units installed. Provide recommendations for periodic inspections, care, and maintenance. Identify common causes of damage with instructions for temporary repair.

1.5 QUALITY ASSURANCE

- A. Code and Regulatory Requirements and Approvals: International Building Code, 2012 Edition, with Amendments.

B. Certifications

1. National Fenestration Rating Council (NFRC). Products shall be certified and labeled for U-Factor, Solar Heat Gain Coefficient (SHGC), and Visible Transmittance per NFRC 100 and 200 Procedures. Unique glass types that are special ordered may not apply, check with Manufacturer.
2. Window and Door Manufacturers Association (WDMA). Products shall be certified and labeled per WDMA Hallmark Certification Program to the AAMA/WDMA/CSA 101/I.S.2/A440 industry standard.
3. Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Certification Council (IGCC) indicating compliance.

C. Pre-Installation Meetings: Conduct meeting at Project site to comply with requirements in Division 01 Section – Project Management and Coordination.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.7 SITE CONDITIONS

- A. Field Measurements: Verify actual dimensions of each opening by field measurements before fabrication. Record measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
- B. Install units per manufacturer's safety and weather requirements.

1.8 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project Warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

- C. 20 Years fully transferrable & non pro-rated on glazing
- D. 10 Years against manufacturing defect on all non-glass components
- E. Lifetime on exterior finish against corrosion, flaking, & peeling.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Performance Requirements: Provide products/systems that have been manufactured, fabricated, and installed to the following performance criteria:
 - 1. Comply with AAMA/WDMA/CSA 101/I.S.2/A440.
 - 2. Performance Class: LC50
 - 3. Performance Grade: PG50
 - 4. U-Factor (NFRC 100): .24
 - 5. Solar Heat Gain Coefficient (SHGC) (NFRC 200): .25
 - 6. Outdoor-Indoor Transmission Class (OITC) (ASTM E90): 25
 - 7. Sound Transmission Class (STC) (ASTM E90): 30
- B. Structural Requirements: Provide products/systems capable of withstanding wind loads based on testing units representative of those indicated for Project that pass AAMA/WDMA/CSA 101/I.S.2/A440, Uniform Structural Load Test:
 - 1. Design Wind Loads: Determine design wind loads applicable to Product from basic wind speed indicated in miles per hour (meters per second) at 33 feet (10 meters) above grade, according to ASCE, Section 6, based upon mean roof heights indicated on Drawings.
 - a. Basic Wind Speed (3 second gust): V = 148 MPH
 - b. Importance Factor: III
 - c. Exposure Category: C
 - d. Internal Pressure Coefficients: +.18, -.18

2.2 MATERIALS

- A. Frame: Fabricated from a wood species approved in WDMA I.S.4.
- B. Exterior Frame Members: A blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material. Provide units in the following color:
 - 1. Color: White.
- C. Sashes:
 - 1. Exterior Components: Glass reinforced fiber with the following color:
 - a. Color: White.

2. Interior Components: Water repellent wood preservative treated interior framing per WDMA I.S.4 in the following species and finish. Adhesively bond exterior and interior sash components.
 - a. Species: Pine.
 3. Painted Color (Pine):
 - a. Color: White.
- D. Picture Sash Members:
1. Exterior Components: Glass reinforced fiber in the following color:
 - a. Color: White.
 2. Interior Components: Water repellent wood preservative treated interior framing per WDMA I.S.4 in the following species and finish. Clip-fasten interior components to exterior components.
 - a. Species: Pine.
 3. Painted Color (Pine):
 - a. Color: White.
- E. Sill: A blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material approved in AAMA/WDMA/CSA 101/I.S.2/A440.
- F. Weatherstripping:
1. Upper Sash Head and Lower Sash Sill: Continuous bulb style, foam-filled vinyl.
 2. Upper Sash Stiles: Single bulb style, vinyl-covered, foam-filled.
 3. Lower Sash Stiles: Dual bulb style, vinyl-covered, foam-filled.
 4. Meeting Rails: Continuous bulb style, foam-filled vinyl.

2.3 GLAZING

- A. General: Insulating glass units certified through the Insulating Glass Certification Council as conforming to the requirements of IGCC. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.
- B. Where safety glass is indicated or required by applicable code, provide Kind FT heat-treated float glass.
- C. High-performance, low-emissive glass that blocks 95% of UV rays, Low SHGC, Argon Gas Blend Filled Insulating Glass Units:
 1. Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.
 2. Glass: Tempered insulating glass units consisting of an outboard and inboard lite of clear tempered glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind FT.
 - a. Air Space: 3/4 inch (76 mm).

3. Magnetron sputtering vapor deposition (MSVD) TiO₂ coating applied to the No. 1 surface.
4. High-performance low-emissive glass coating that blocks 95% of UV rays: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
5. Filling: Fill space between glass lites with argon gas blend.
6. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.

2.4 HARDWARE

A. Double-Hung Window Hardware:

1. Hardware Locks: Die-cast zinc sash locks in the following style and color:
 - a. Style: Traditional.
 - b. Color: White.
2. Balancers: Fit top and bottom sash with concealed frame mounted balancers. Design balancers to allow easy operation of double-hung units.
3. Tilt mechanism integrated into lock.

2.5 ACCESSORIES

- A. Sill Stool: Wood members machined from clear material or veneered finger joined material approved in AAMA/WDMA/CSA 101/I.S.2/A440.
- B. Extension Jambs: Wood members machined from clear material or veneered finger joined material. Pre-drill extension jambs for application. Factory-applied extension jambs are available in 1/16 inch (1.6 mm) depth increments ranging from 5-1/4 inch (133 mm) depth to 7-1/8 inch (181 mm).
- C. Exterior Trim and Casing: Where indicated on Drawings, provide trim attached to attachment strip.
 1. Color: Match window framing.
 2. A blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material:
 - a. Flat Trim:
 - 1) Width: 3-1/2 inch (89 mm) by 1 1/2 inches (38 mm) deep.
 - b. Sill Nose: 1 15/16 inches (49 mm) wide by 1 7/8 inches (48 mm) deep.
 - c. Mull Cover: 3-3/4 inch (95 mm) wide by 1 1/2 inches (38 mm) deep.
- D. Window Pans: Window pans are to be shop fabricated and made of 3003 mill finish aluminum a minimum of .032 inches thick. They shall have the ends and back turned up a minimum of .3759 inches and shall be riveted and caulked to ensure water tightness. The front of the pans shall be turned down a minimum of .75 inches over sill blocking. Other final layers of peel and stick flashing products, used for additional waterproofing of window openings above the metal window pans, shall terminate within the sealed area of the pans.
- E. Sealant: Use a one-part, neutral-coloring, ultra low-modulus silicone elastomeric sealant that will not stain adjacent masonry surfaces and that reacts with atmospheric moisture to form a

durable, flexible building sealant. Color to match adjacent surfaces as closely as possible using manufacturer's standard colors.

2.6 GRILLES

- A. Simulated Divided Light Grilles: Fixed exterior and interior grilles with a white anodized aluminum muntin bar, 1/4 inch wide, and white spacer within insulated glass unit where indicated on Drawings.
1. Exterior Grille: Provide a blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material: where indicated on Drawings. Install grilles on exterior of glass with adhesive tape to simulate true divided light muntin bars in the following color:
 - a. Color: White.
 2. Interior grille: Provide profiled wood grilles applied with adhesive tape to interior glass surface.
 - a. Wood Species:
 - 1) Species: Pine.
 - b. Finish: Painted Color (Pine):
 - 1) Color: White.
 3. Width: 1/4 inch.
 4. Pattern: As indicated on Drawings.

2.7 FABRICATION

- A. Preservative Treatment: Treat wood sash and frame members after machining with a through-body water repellent preservative per WDMA I.S.4.
- B. Double-Hung Units:
1. Outer Frame: Provide a blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material.
 2. Outer Frame: Provide a blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material adhesively bonded corner keys.
 3. Sill: Provide a blend of 40% reclaimed wood fiber by weight and 60% thermos-plastic polymer that is fused together outer frame with wood core material.
 4. Bond outer frame members and sill to wood base frame with adhesive.
 5. Jamb and Head Jamb Liners (Pine):
 - a. Side Jamb Liner: Solid pine filler attached to a rigid PVC vinyl extrusion.
 - b. Head Jamb Liner: Solid pine head parting stop and interior aesthetic filler with rigid PVC vinyl head liner.
 6. Sash Components:
 - a. Exterior Sash: Pultruded fiberglass material with adhesively bonded PVC corner keys.

- b. Interior Sash: Clear or veneer wood adhesively applied to exterior sash components.
- 7. Factory applied weatherstripping.
- C. Picture Units:
 - 1. Outer Frame: Provide fiberglass bonded corner keys.
 - 2. Interior Sash: Provide clear wood interior sash components clip fastened to exterior sash profile.
 - 3. Provide clear or veneer wood stops.
 - 4. Mechanically fasten sill assembly and wood sub frame components. Bond outer frame members to sub-frame with adhesive and mechanical fasteners.
- D. Glazing: Factory glazed with glazing sealant.
- E. Weatherstripping: Factory-applied to unit frame. Field-applied interlocking weatherstripping at panel meeting stiles.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Site Verification of Conditions: Verify that site conditions are acceptable for installation of units, including the following:
 - 1. Concrete surfaces are dry and free of excess mortar, rocks, sand, and other construction debris.
 - 2. Masonry openings are square and dimensions are correct.
 - 3. Rough openings are square, plumb, and dimensions are correct.
 - 4. Sill plates are level.
 - 5. Wood frame walls are dry, clean, sound, and well nailed or glued, free of voids and without offsets at joints.
 - 6. Nail heads are driven flush with surfaces in openings and within 3 inches (76 mm) of rough opening.
- B. Do not proceed with installation of units until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. General:
 - 1. Comply with the instructions and recommendations of window manufacturer.
 - 2. Remove unit components, parts, accessories, and installation guides from carton.
 - 3. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.
 - 4. Field-assemble multiple units before installation per manufacturer's installation guides.
- B. Interface With Other Work:

1. Perform installation per Manufacturer's installation guides.
2. Install units level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction. Install drip cap at head of single units and joined assemblies.
3. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
4. Seal perimeter of unit after exterior finish is applied per requirements of Division 07 "Joint Sealants" Section.
5. Refer to, and comply with, additional requirements in manufacturer's installation guides.
6. Install optional hardware and unit accessories after cleaning.

C. Site Tolerances:

1. Adjust operation, hardware, and accessories for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.

3.3 FIELD TESTING

A. General: If applicable, test units per with the following procedures:

1. Inspect units and verify installation per Manufacturer's instructions.
2. For products installed less than 6 months, comply with AAMA 502-08 Voluntary Specification for Field Testing of Windows and Sliding Glass Doors, Procedure B.
3. For products installed longer than 6 months, comply with AAMA 511-08: Voluntary Guideline for Forensic Water Penetration Testing of Fenestration Products. If test indicates that field testing of units is necessary, test product as indicated in paragraph 1 above.
4. Do not proceed with installation of additional units until unacceptable conditions are corrected.

3.4 CLEANING

- A. Clean units using cleaning material and methods specifically recommended by window manufacturer.
- B. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Avoid damaging protective coatings and finishes.
- D. Protect unit surfaces from masonry cleaning solution that could damage insulated glass panels or hardware.
- E. Remove debris from work site and properly dispose of debris.

3.5 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on site.

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END OF SECTION 085200

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on following interior substrates:
 - 1. Wood.

1.2 DEFINITIONS

- A. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
- B. Samples: Color samples showing range of colors similar to adjacent surfaces for Architect's selection.
- C. Sample Installation: Paint one area where wood trim has been replaced for Architect's approval before proceeding with additional areas.

PART 2 - PRODUCTS

2.1 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

- C. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Wood: 15 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
- B. 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.

3.4 INTERIOR PAINTING SCHEDULE

- 1. Institutional Low-Odor/VOC Latex System MPI INT 6.1Q:

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- a. Prime Coat: Primer, latex, for interior wood, MPI #39.
- b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
- c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147.

END OF SECTION 099123